

DEPARTMENT OF AGRICULTURE, CANADA

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REPORT

OF THE

DAIRY AND COLD STORAGE COMMISSIONER

FOR THE

FISCAL YEAR ENDED MARCH 31

1912

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Dairying, Fruit, Extension of Markets and Cold Storage

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OTTAWA

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# REPORT

## OF THE

# DAIRY AND COLD STORAGE COMMISSIONER

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OTTAWA, March 31, 1912.

To the Honourable

The Minister of Agriculture.

SIR,—I have the honour to submit my report for the year ending March 31, 1912. Following the practice of former years, the report is presented under four heads, corresponding to the divisions under which the work of the branch is carried on.

### DAIRYING.

#### THE SEASON OF 1911.

The season of 1911 was notable for the hot dry weather that prevailed over the greater part of the Northern Hemisphere and which seriously curtailed the production of milk in many countries besides Canada. The shortage thus created in the supply of butter and cheese in the world's markets, coupled with an over export of butter from Canada during the actual manufacturing season, raised prices to the highest point ever reached in this country.

Notwithstanding the somewhat unfavourable conditions, the export figures, if considered with the estimated growth in home consumption, show that production is still on the increase.

Following the shortage in the Northern Hemisphere there was a marked decline in the production of butter in Australia for the season of 1911-1912.

It became apparent early in the winter that the stock of stored butter in Canada, plus the winter production, would be insufficient to supply the demand until the new season's output would be available. As a result, a large quantity of butter was imported, principally from New Zealand, the total quantity coming from that country down to date being 2,139,944 pounds. There has also been imported during the year 929,318 pounds from the United States.

At first glance it may appear strange that Canada should go almost to the opposite end of the earth for a portion of her butter supply, but when it is considered that the freight and duty (3 cents per pound, under the Preferential Tariff) on freshly made butter from New Zealand amounts to about the same as the cost of carrying the Canadian article from June, July or August to the month of March, to say nothing of the loss through deterioration in the quality of the butter, the matter is not so surprising after all.



Canada never has, and probably never will produce enough butter during the winter months to supply current demands, and that means either that a part of the summer surplus must be held in storage against the period of shortage, or that the deficiency must be met with importations from the Southern Hemisphere. It is not unlikely, therefore, that the Pacific coast, at any rate, will continue for some years, as in the past, to secure partial supplies from Australasia. Fortunately, the demand arises during the flush of the manufacturing season in that part of the world.

#### THE EXPORT TRADE.

The Trade and Navigation returns show that the export trade in dairy produce has on the whole been well maintained during the period under review, although the season was not as favourable for milk production as that of 1910. There was a further decline in the quantity of cheese exported, and also in the shipment of cream to the United States, but the shrinkage in these two items was balanced by an increase in the quantity of butter exported.

The New Zealand shipments of cheese during 1910-1911 and during the season now drawing to a close (1911-12), have not made the increase that was expected by the trade.

Australian shipments of butter have declined on account of the drought which is seriously affecting some parts of the country.

Germany continues to grow in importance in the international trade in dairy produce, every year importing larger quantities of butter. It would appear that on the whole the world's consumption of dairy produce is increasing rather faster than production, and that reserve stocks are lighter at the present moment than they have been for many years. Australia, New Zealand and possibly Russia (Siberia) are the only countries that are likely to increase their exports of butter or cheese to any great extent. In these countries there is a steady development in agriculture, which tends towards live stock rather than cereal production, and there is not the same industrial growth that we have in Canada. On the other hand, consumption is increasing faster than production in the United States, Germany, and in some other European countries.

The outlook for dairying at present is exceedingly good, and there is every encouragement, from the market point of view, for Canadian farmers to increase their production.

#### THE HOME TRADE.

The home trade in dairy produce, while a very large one in the aggregate, has not, in the past, attracted as much attention as its volume would seem to warrant, for the reason that much of the supply for home consumption passes directly from producer to consumer, or at most through the hands of local retail grocers.

This was especially true as long as each province or district produced sufficient for its own needs, but of late years a new feature has developed in the home trade, as a result of the enormous increase of population in the western provinces, creating a demand which has far outstripped the local production. There was a surplus for export in the western provinces in the nineties, but now many thousands of tons of butter and cheese are shipped annually from Ontario and Quebec to points west of the Great Lakes. This trade is becoming so important that the largest operators, who



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formerly devoted their attention exclusively to the export trade, are now giving some attention to it.

Unfortunately, there is a considerable quantity of very inferior dairy butter produced in the western provinces, and as the local markets will not use it, it is sent to Montreal, most of it eventually finding its way to New York, where it goes to the renovators.

This shipment of butter out of the prairie provinces while other butter must be sent back to supply the local demand, involves a great economic waste. There is the loss of double freight on every lot that is shipped to the east, and some one has to pay unnecessary commissions.

The Provincial Departments of Agriculture are striving to improve the quality of this butter, but the problem which confronts them is one of great difficulty and progress is necessarily slow. Many of the buttermakers are foreigners, with low standards of dairy sanitation, and even those whose intentions and ambitions are of the best are often hampered by lack of proper facilities and equipment. A contributory cause of no little importance in the production of this inferior butter, is the manner in which it is handled by the country storekeepers, into whose hands it usually passes from those of the producer. It is exposed to high temperatures and various other deteriorating influences which tend to decrease its value very rapidly.

A great improvement would result if these storekeepers would provide themselves with small ice storages, in which the butter could be placed as soon as received. The cost would be very little and would soon be repaid in the higher value of the butter.

## MARKET MILK.

The demand for milk to supply the city of Winnipeg and other towns in Manitoba is having a noticeable effect on the supply of milk at the cheese factories and creameries in that province. The creameries in the Fraser Valley in British Columbia are having a similar experience on account of the growing demand for the city of Vancouver.

The milk dealers in both Winnipeg and Vancouver have imported milk during the past winter, from the United States, the supply for Winnipeg coming from the neighbourhood of St. Paul, Minn.

The enormously increased consumption in Montreal, Toronto, Ottawa and other eastern cities is yearly making the problem of furnishing the people of these large centres with an adequate supply of wholesome milk a much more difficult one than it formerly was. There has been no lack of enterprise in the matter and the milk distributing companies, which have been established in all the principal cities, under various plans, while not organized as philanthropic institutions, are really doing a very humane work. The best of these city milk companies are exceedingly well conducted and they are doing a great deal to improve the milk supply in their respective localities.

A marked improvement in the quality of milk and cream has greatly increased the consumption per capita, and the more general use of ice cream has given that article considerable importance in the home trade.

There has been great activity during the past year on the part of Medical Milk Commissions, Boards of Health, and other bodies both voluntary and official, looking towards improvement in the milk supply of towns and cities. Some of the regulations,



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or perhaps it would be more correct to say suggested regulations, have been rather impracticable, but the whole tendency is towards better conditions than have prevailed in the past.

#### EXPANSION OF THE CREAMERY INDUSTRY.

There is considerable activity in dairy production in Nova Scotia, and several new creameries will be in operation in that province in 1912. Creamery buttermaking in Nova Scotia has received an impetus from the marked success which finally attended the operation of the creamery at Scotsburn in Pictou County, by the Dairy Division.

The creamery industry is growing steadily in some parts of the prairie provinces. That part of Alberta lying between Calgary and Edmonton, and along the Saskatchewan river in the province of the same name, and the two districts where most progress is being made. Much of the new country being opened up by the Grand Trunk Pacific Railway, and other lines running to the west and northwest of Edmonton, appears to be eminently adapted for stock raising, and there is every reason to suppose that a large and flourishing dairy industry will eventually be developed in those regions.

The quantity of creamery butter manufactured in Ontario is steadily increasing although the increase is partly due to a diversion of milk from the cheese factories.

#### THE SHIPPING OF GREEN CHEESE.

There is probably nothing which threatens the supremacy of Canadian cheese on the British market so seriously as this practice of shipping immature cheese. It seems to be one of the most difficult things to control in connection with the business, and yet all are agreed that the practice is harmful. The difficulty seems to be that the salesmen cannot arrive at unanimity in the matter of holding the cheese until it has reached a proper stage of ripeness. They are afraid of losing the market or of a neighbour getting an advantage, and appear to think that they gain in weight of cheese by saving the shrinkage that would occur if the cheese were held a week or two longer. As a matter of fact, in properly equipped cool curing rooms, where the temperature is kept at the right point, the loss of shrinkage would be avoided and the increase in the consumption of cheese, on account of its better condition, would be one of the surest ways of increasing the demand and thus improving the price. The arguments are all in favour of holding the cheese for a reasonable time in the factory, and it is hoped that the salesmen and the patrons—the latter are really the most interested persons—will yet see the folly of continuing the practice which has already resulted in great harm to the industry and will be more seriously felt in the future if it is persisted in. Although the price of cheese was higher in 1911 than it has ever been in Canada before, it would have been still higher if the cheese had been better cured before being placed on the market.

#### COW TESTING.

Dealing more specifically with the actual work of the Dairy Division, I am pleased to be able to report that the movement having for its object the improvement of dairy herds, and generally known as "cow testing," was considerably extended during the year. The division endeavours to promote this important work both by propaganda



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and by the actual participation of members of the staff who supervise the work of the cow testing associations, or act as Recorders for the Dairy Record Centres. The total number of cows under test in 1911 was 10,412. Of this number, 6,793 were under test for the full period of lactation, an increase of 1,952 cows as compared with the year 1910.

## DAIRY RECORD CENTRES.

Dairy Record Centre is the name that has been given to our newest scheme for the advancement of cow testing. An expert is employed who gives his whole time to a limited district. He is required to provide himself with a horse and rig and to get into touch with the farmers within a reasonable radius of a common centre. It is his business to encourage as many as possible of these farmers to weigh the milk of individual cows and to take samples for testing. He must then see that the samples are properly tested, or do it himself if satisfactory arrangements can not be made to have it done at the local cheese factory or creamery. Once a year a complete census of all the herds is taken with full particulars as to breeding, feeding and means taken to improve the average production. With this work carried on for a number of years in the same locality a mass of information will be secured which ought to be valuable and lead to good results. Six of these Dairy Record Centres were established in the spring of 1911; three in Ontario, two in Quebec and one in the Maritime Provinces. During the past few months eight additional men have been employed for as many new Centres, and supervisors have been appointed in New Brunswick and in Prince Edward Island.

In former years the cow testing movement was kept going only through considerable activity and pushing on the part of the Dairy Division, but it is gratifying to be able to state that during the past few months the interest in this work has increased very much, and requests are now coming from all quarters for information and assistance. Several years of persistent educational work was necessary to get the cow testing habit established. The records in the Dairy Division show many instances of remarkable increases in the average yields of herds following systematic and careful weeding, based on the information gained from the testing of individual cows. It was only after we were able to publish these results that many farmers became convinced, to the point of action, that even though the testing of the cows does involve a little trouble that it is well worth while if intelligently followed. There is every reason to believe that the average yield of all the cows in Canada could be increased by at least 20 per cent if general attention was given to the matter.

## THE COOL CURING OF CHEESE.

While this Branch has not carried on any active work with respect to the cool curing of cheese since the Government cool cheese curing rooms were closed in 1906, no opportunity has been lost of keeping the advantages of the system prominently before the cheese factory owners and patrons. Plans and specifications have been supplied to those who propose to equip their cheese factories with cool curing rooms, and experts connected with the staff, who have had special experience in this connec-



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tion, have attended meetings and consulted with factory owners for the purpose of assisting them in carrying out the necessary improvements. Although the conditions under which cheese have been marketed during the past two or three years have interfered to some extent with the general adoption of the system, there has been a large number of cool curing rooms erected in connection with the cheese factories, and in some districts nearly all the factories are now so equipped.

## EXPERIMENTS IN THE CARE OF CREAM

Mr. George H. Barr, Chief of the Dairy Division, assisted by J. G. Bouchard, continued the investigations and experiments in the handling of cream for cream gathering creameries, which were begun in 1910 at the Renfrew Creamery. The conclusions drawn from this work have been published in Bulletin 32 for general distribution among creamery patrons.

## THE NEW DAIRY STATIONS.

The officers of the Dairy Division have long felt the need of having control of a cheese factory and a creamery where the various problems which arise in connection with the manufacture of butter and cheese could be studied under actual factory conditions.

It was a matter of much satisfaction to myself and the dairy staff when authority was given for the purchase of a creamery at Brome, Que., and two small cheese factories at Finch, Stormont County, Ont., with a view of establishing dairy stations at these two points. The plans for the Brome Station have not been fully matured, but a contract has been let for the erection of a cheese factory at Finch, which will serve the patrons of the two small factories, that have been operated in ruinous competition for several years, about a mile apart. Their revenue was so small that it was impossible for the management in either case to render the service which milk producers are entitled to.

The new factory at Finch will be of permanent construction, with cement concrete floors and walls, a thorough system of drainage, including septic tanks, and will have a cool curing room with an ice chamber attached, and a refrigerator for butter on the air circulation system.

The equipment will provide for the manufacture of cheese, the pasteurization of whey, the manufacture of whey butter, casein, &c. It will be operated as a model factory, on a purely business basis, and it is hoped that the example and illustration which will thus be afforded, will have the effect of working an improvement in the character and management of many of the cheese factories in Eastern Ontario. At the same time the Station will be available for experimental work and facilities are being provided with that end in view.

The Brome Creamery is expected to serve the same purpose in the Eastern Townships.

## THIRD DOMINION CONFERENCE OF DAIRY EXPERTS.

Acting on your authority I was pleased to arrange for the Third Dominion Conference of Dairy Experts on December 6th and 7th, 1911.



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All the leading instructors and dairy school superintendents were invited to attend, and their expenses in coming to the Conference were paid by the Branch. All the provinces were represented except British Columbia, whose representative was not able to leave home at that time.

It is almost needless to point out that the principle object of such a conference is to assist the various experts and instructors in arriving at uniform methods, and in determining as far as possible, from the discussions that take place, as to which methods are preferable where more than one is suggested.

These Conferences are very highly appreciated by those who take part in them, and there can be no doubt about their usefulness as an educational factor.

A verbatim report of the papers and discussions at this Conference is being published as a special report for general distribution.

## THE ENFORCEMENT OF DAIRY LAWS.

The Inspector of Dairy Products reports very little violation of the dairy laws. There has been only one complaint respecting the practice of "stuffing" cheese with worthless curd or old cheese, since the Inspection and Sales Act was amended in 1908, making it a penal offence. A conviction was secured in the case mentioned.

The Inspector visits the various centres from time to time and secures samples of butter for analysis. No imitation butter has been discovered and only a few cases in which the legal limit of water has been exceeded. One case of excess of water in Canadian butter was reported from England by the High Commissioner. An investigation was made at once, at the creamery where the butter was made, and samples of the butter then being manufactured proved to be within the legal limit of 16 per cent of water.

## FRUIT.

## THE SEASON OF 1911.

The most notable feature of the year, in connection with the fruit growing industry, was the phenomenal crop of apples in Nova Scotia, being very nearly double any previous record. This is accounted for partly by the fact that a large number of young trees are just coming into bearing, but the enormous crop was chiefly due to the fact that all trees, old and young, were very heavily laden.

With the problem of this record crop facing them, the different elements in the Nova Scotia apple trade were stirred to unusual activity. For the first time, Nova Scotia apples came into keen competition with Ontario and British Columbia fruit, in the markets of the prairie provinces. It is estimated that at least 176,000 barrels of Nova Scotia apples were shipped west, reaching such distant points as Calgary and Edmonton, in considerable quantities.

The meeting of the East and the West, on common ground as it were, has introduced a new note into the discussion of national aspects of the fruit trade. This was distinctly in evidence at the recent Dominion Conference of Fruit Growers.



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## A CLEAN CROP.

Another prominent feature of the season was the unusual freedom from fungous pests. It is many years since the apple crop was as "clean" as it was in 1911. The amount of spraying done was greatly in excess of any previous year and climatic conditions were unfavourable for the development of fungous diseases.

## A YEAR OF PROGRESS.

A distinct advance was made during the year in more than one respect. Mention has already been made of the greatly increased amount of spraying done during the year. Better organization for the packing and handling of the crop has been followed by satisfactory results. The packing of fruit and especially the packing of apples in boxes showed marked improvement. The number of boxes used for apples in the eastern provinces was very largely increased. The annual apple shows at Toronto, St. John, N.B., and in Nova Scotia furnish the best evidence as to progress along this line.

## THE COMMERCIAL EXPORT OF PEACHES.

Following up the trial shipments of peaches to Great Britain made by this Branch in 1910, a consignment of 195 cases was sent to the Festival of Empire Exhibition, Crystal Palace, London. The peaches arrived in perfect condition and 'stood up' for several weeks after being placed in position in the Canadian exhibit and are reported to have attracted much attention, and to have received very favourable comment.

Mr. C. A. Dobson of Jordan Harbour, who shipped a large number of cases in 1910, continued the export business in 1911, shipping in all 3,180 cases. On November 29th, he wrote to this office as follows:—

'I am sure you will be delighted to know of the success I have met with in the delivery of peaches on the English market. At the recent Fruitgrowers' Convention in Toronto, I was asked to give expression in regard to my success in deliveries, and I have much pleasure in making the statement that the shipments arrived in perfect condition, and that we endeavoured to live up to the instructions out-lined by you in your pamphlet. (Bulletin 27, giving the details and results of the trial shipments by this Branch in 1910.) I stated that if growers, desiring to place their fruit on the English market, followed the suggestions contained in your pamphlet in dealing with export of peaches, nothing but success would follow. It is quite practicable to make deliveries successfully throughout England, Ireland and Scotland.'

## THE ADMINISTRATION OF PART IX OF THE INSPECTION AND SALES ACT.

The fruit inspection service was extended during the year, by the appointment of five additional temporary inspectors. An inspector was stationed for the first time at Saskatoon, Sask., and additions were made to the staff in Ontario and Nova Scotia.

The violations of the law with respect to the packing and marking of apples were not as numerous as they were in 1909 and 1910, notwithstanding the fact that the number of actual examinations were greatly in excess of any former year. This was probably due to improved packing and partly to the cleaner condition of the apples.





Delegates and Officials, at the Third Dominion Conference of Dairy Experts Ottawa December 6 and 7, 1911.







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## THE FRUIT CROP REPORT.

The publication of a monthly Fruit Crop Report from May to September has been continued. The collection of reliable data from month to month respecting the state and prospects of the fruit crop in Canada, and to some extent in other countries, is attended with a very considerable amount of work. Persistent effort is necessary to keep a reliable list of crop correspondents in good working order. The compilation of the report calls for care and judgment, with an intimate knowledge of fruit growing conditions in all parts of Canada. Chief McNeill, who gives this matter his personal attention, has laboured assiduously to make the report of such a character as to furnish the fruitgrowers and dealers with information that will be of value to them.

## INSTRUCTION IN BOX PACKING OF APPLES.

At different times during the past five or six years, this Branch has employed expert packers from the Pacific coast to give instruction in box packing to the fruit growers in the eastern provinces. Mr. P. J. Carey, fruit inspector in Ontario, who has given special attention and study to this kind of work, was employed during the past season as instructor in box packing, dividing his time between Ontario and Nova Scotia. Mr. Jas. Gibbs, head packer for the Farmers' Exchange, Kelowna, B.C., was also engaged for six weeks to give instructions in Ontario and Quebec, and to repack the apples for the display at the Fruit Growers' Conference. It is proposed to extend this work during the coming season.

## APPLES FOR INTERNATIONAL EXHIBITIONS.

The duty of selecting, packing and storing apples for the international exhibitions in which Canada has participated for several years past has been assigned to this Branch. In September, 1911, some 200 boxes of Fameuse and McIntosh Red were collected and sent to the Festival of Empire at the Crystal Palace, London, to supplement the display of 1910 fruit which was forwarded in the spring. Over 700 boxes of later varieties were secured in the different provinces and are now held in cold storage to be sent to London in April. Some of these will be shown at the great International Horticultural Exhibition to be held in London in the month of May, and the remainder will be used to continue the exhibit at the Crystal Palace throughout the coming season.

The apples will be placed in cold storage, in London, as soon as they arrive, and will be taken out in small lots from time to time as may be necessary to make a continuous exhibit until next October.

It is believed that the apples now on hand are the finest lot ever prepared for such purposes in this country. The selection and packing was done by members of the staff, except in British Columbia, where the provincial department of agriculture very kindly attended to the matter.

## SPECIAL INQUIRY INTO THE FRUIT GROWING INDUSTRY.

It seemed to be desirable that some effort should be made to collect in one statement, for the whole country, an account of the general tendency in the expansion of fruit growing, the most pressing needs of the industry, the probabilities of production



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in the near future, in the different localities, and other information of a similar character. It was impossible for the Fruit Division, with its limited staff, all of whom were busily engaged with other work, to undertake this inquiry, but the Department was fortunate in being able to secure the services of Mr. W. H. Bunting, the well known fruit grower of St. Catharines, Ont., to carry out the investigation. Mr. Bunting, accompanied by Mr. Fred. Grindley, B.S.A., as secretary, beginning in July, visited all the fruit growing districts of Canada in some detail, making inquiries into different aspects of the industry. The investigation has been completed, and the observations made, with the conclusions arrived at, will be submitted in a special report which is now ready for the printer. Those who are interested in the fruit growing industry will look forward to the publication of this report with interest.

#### THE FRUIT GROWERS' CONFERENCE.

The Third Dominion Conference of Fruit Growers met according to your invitation, under the auspices of this Branch of the Department, in St. Patrick's Hall, Ottawa, on February 14, 15 and 16. There were 42 regularly accredited delegates present, representing the provincial fruit growers' associations; the provincial departments of agriculture; the agricultural colleges; the co-operative societies and the apple shippers associations. A number of visitors attended the different sessions of the Conference.

A very lively interest was taken in the proceedings of the Conference, and all the resolutions that were introduced were discussed with intelligence and keenness, but also with fairness and consideration for the views of others.

These conferences serve the very useful purpose of bringing together representative fruit growers from different parts of the country, the meeting of which, apart from the proceedings of the conference, must have no little educational value. In a country like Canada, with such widely separated sections devoted to fruitgrowing, it is necessary that there should be some intercourse between those living so far apart, if the industry is to be developed on sound national lines.

Acquaintances are formed at these meetings which are bound to be useful in many ways. The Conference being the accredited mouthpiece of the fruitgrowers at large, is the proper medium through which the aims and desires of those engaged in the industry may be laid before the Minister of Agriculture and his colleagues. By no other means could the needs of the fruit growers find such ready and authoritative expression.

If future conferences could be held in the summer season, it might be advisable to consider the practicability of convening them in different fruit growing districts. This would add to the interest of the meeting, and increase its educational value by affording those from a distance an opportunity of learning at first hand something of the fruit growing conditions in districts that otherwise they might never be able to visit.

The two dominant notes of the Third Conference were a demand for closer inspection of apples at the points of packing and shipment, and a request to have the Fruit Division separated from the other divisions which make up the Dairy and Cold Storage



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Branch, giving the Chief officer an independent position in which he would be directly responsible to the Deputy Minister.

## INSPECTION AT POINTS OF SHIPMENT.

As to the first mentioned demand, the matter of meeting it appears to hinge on the point as to whether the inspection is to be made all but universal, amounting practically to official grading, or whether it is to be continued as it was originally intended it should be, merely as an incidental service to act as a deterrent to false packing and marking, and to some extent as an educational force in promoting better methods. If the principle of general inspection at points of shipment is adopted, then the country must be prepared to meet an enormously increased expenditure under this head. It is doubtful if many who advocate such a course fully realize what a large staff of inspectors would be required to carry it out, and how hard it is to get suitable men to fill such positions, although that statement does not imply that there is any lack of applicants.

## THE SEPARATION OF THE FRUIT DIVISION.

With respect to the proposal to give the fruit division an independent status, the writer finds himself in a somewhat awkward position in attempting to discuss it. Possibly the wisest course would be to refrain from discussing it at all.

There is this to be said, however, that the discussions on the subject have made it quite clear that the proposal is a purely impersonal one, based on a perfectly natural desire on the part of the fruit growers to have the industry which they represent receive a more distinct recognition. This appears to arise partly from a somewhat mistaken and persistent view that the fruit division occupies, under the present organization, a secondary position to that of the dairy division. That view is not correct. The status of the two divisions is exactly the same and the chiefs of each stand in precisely the same relation to the head of the Branch, although it must be admitted that the designation of the Branch, and the title of its Chief Officer, lend some colour to the belief that the one is placed in an inferior position to the other. The present organization, from an administrative point of view, is an excellent one, permitting as it does an extent of co-operative effort between the divisions of cold storage and the extension of markets with the fruit division, that would not be practicable under separate branches.

On the other hand, if the writer were relieved of responsibility for the fruit division, it would enable him to give more attention to some other lines of work, which lack of time now prevents. A connection with the fruit industry, which is a very pleasant and agreeable one, would still be maintained through the cold storage and markets divisions in the handling, transportation and cold storage of fruit along with other perishable products.

## THE DISPLAY OF APPLES AT THE FRUIT CONFERENCE.

A new feature was introduced at the recent fruit growers' conference, by arranging for a collection of apples from all the fruit growing provinces, as well as a few boxes from the states of Washington, Oregon and Virginia. The display consisted of about



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150 boxes of choice specimens of the leading varieties from each district, and it was undoubtedly the most representative exhibit ever made in Canada. Two boxes of apples, grown by Mr. A. P. Stevenson, Dunston, Manitoba, created considerable interest. The display, which was very much admired by delegates and visitors, proved very clearly that the finest of apples can be produced in all the recognized apple growing districts of Canada. His Royal Highness the Governor-General, who honoured the conference with his presence for a short time, examined the apples with much interest and very graciously agreed to accept a box from each province, which were accordingly sent to him at the close of the conference.

## EXTENSION OF MARKETS.

### INSPECTION OF CARGOES AND REFRIGERATOR CARS.

The work which is more especially assigned to the Extension of Markets Division includes the inspection of cargoes at Canadian and United Kingdom ports, the supervision and inspection of the iced car services for the carriage of butter, cheese and fruit, and the placing of thermographs with perishable cargo, in order to secure continuous records of temperature during the voyage across the Atlantic or to South Africa and Australasia.

The reports of the cargo and refrigerator car inspectors have proved most valuable in furnishing the specific details which are necessary in dealing with railway or steamship companies to secure improved services. It is only fair to say that the responsible officials of these companies are not unwilling, or opposed, as a rule, to remedying defects in the services which they control, when they are convinced that the fault lies within their sphere of authority. The trouble is that when an official depends on the employees under him to furnish reports as to general complaints respecting damage to goods in transit, these reports are apt to be coloured because the information, if accurate, might reflect on the employee himself or on his fellow workers as is very often the case. Previously to the inauguration of these inspection services, it was very difficult to obtain any satisfaction from the transportation companies with respect to damage to perishable food products. They nearly always appeared to be able to shift the burden of responsibility to some other shoulder. Moreover, there was much damage sustained that was never known to the shippers. The trade accepted many things as inseparable from the handling of produce, which are now known to be easily avoided. With our very complete records, both in Canada and at ports of discharge in the United Kingdom, and the publicity which may be given to them, it is much easier to fix the blame where it belongs.

I may add that these services have to-day no more ardent supporters than the officials of the transportation companies over whose operations they were designed to act as a compelling force in securing some much needed improvements. These officials realize that careful handling and improved facilities work out to their advantage, in the reduction of claims, etc., as well as to the owners of the produce, to say nothing of the enhanced reputation of that produce on the world's markets.

The information respecting condition of packages, condition and temperature of contents, etc., at various stages of transit from the initial shipping stations to the



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docks in Great Britain, which is made available through the reports of the inspectors employed in this Division, and which is furnished to those shippers who are directly interested in particular consignments, has enabled progressive exporters to meet the requirements of the trade, in certain respects, as no other agency could have done.

## COMPILATION OF WHOLESALE PRICES OF PRODUCE.

Through the Extension of Markets Division, this Branch has recently given considerable attention to the matter of compiling wholesale prices for animal and agricultural products. The leading market journals are received and prices in all the principal markets of Canada and the United States are entered in a permanent record. This record, to be useful and reliable, requires to be compiled with judgment and care, coupled with a good general knowledge of farm products and market conditions. Mr. W. W. Moore, Chief of the Division, has a special aptitude for such work, and I look forward with confidence to having in this Branch a complete and trustworthy record of information along these lines.

## INFORMATION FOR SHIPPERS OF FARM PRODUCTS.

The Markets Division also furnishes Canadian shippers of farm products with information relating to outside markets and places before them individually, inquiries of a commercial nature which are received by the Department from firms abroad. An endeavour is made to keep in touch, as far as possible, with the international trade in these products, so as to be in a position to give reliable and intelligent advice to those Canadian shippers who are seeking new markets, or to others who may be looking for such products as Canada has to dispose of.

## COLD STORAGE.

## CREAMERY COLD STORAGE BONUSES, 1911.

The number of applications for creamery cold storage bonuses, received during the year, was 65 as compared with 27 during the previous year. Of these 65 applications only 47 were recommended for the full bonus of \$100, the other 18 not having complied with the conditions. This brings the total number of creameries that have received the full bonus of \$100 since 1897 up to 466. In addition to this number 145 creameries received \$75 and 139 \$50 each. The total payments on this account to date amount to \$64,485.

## ICED CAR SERVICES.

The usual iced car services for the carriage of butter, cheese and fruit were arranged for with the railway companies.

For the iced butter car service the Department, through this Branch, guarantees  $\frac{2}{3}$  of the earnings of a minimum car load for cars operated over a definite route every week, plus \$4.00 for icing. These cars pick up butter in any quantity, at way stations, and the shippers are charged the usual L.C.L. rates.



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For the iced cheese car services the Department agrees to pay the icing charges to the extent of \$5.00 per car, on a limited number of cars that are ordered by the shippers themselves for car load shipments during 11 weeks beginning in June.

For the iced fruit car service the Department pays icing charges to the extent of \$5.00 per car for the shipment of fruit in car loads intended for export.

#### GUARANTEE OF EARNINGS OF COLD STORAGE SPACE ON STEAMSHIPS.

Arrangements were again made to have small cold storage chambers on steamships reserved for the carriage of fruit only, to London, Liverpool, Glasgow and Bristol. Chambers were reserved on 19 steamships between August 12 and September 30. This provision, which was made first in 1909, has resulted in a large increase in the export of tender fruit to Great Britain. In many cases the chambers are filled so there is no charge on the Department. The cost of the whole service has been very small compared with the importance of the trade which it is hoped to develop.

#### THERMOGRAPHS.

The practice of placing thermographs with perishable products, in the different parts of the steamers where such goods are stowed, was continued and a large number of temperature records were secured. The Branch has records of the temperature at which practically every shipment of produce was carried across the Atlantic in 1911, and also of many shipments to South Africa and Australia.

#### COLD STORAGE SUBSIDIES

Six contracts for the payment of subsidies under the Cold Storage Act were entered into during the year at the following places:—Calgary, Alta., Edmonton, Alta., Moosejaw, Sask., Saskatoon, Sask., Regina, Sask., and Joliette, Que.

Applications are now under consideration from Brantford, Ont., North Bay, Ont., Brandon, Man., Chatham, Ont., Fort William, Ont., and Pacofi (Queen Charlotte Islands), B.C.

#### GENERAL.

##### PUBLICATIONS.

The following publications have been issued during the year:—

##### *Bulletins.*

- No. 28. "The Dairying Industry in Canada, being an Historical and Descriptive Account."
- 29. "Notes for Factory Cheesemakers."
- 30. "Cream Cheese."
- 31. "A List of Cheese Factories, Creameries and Condensed Milk Plants in Canada."
- 32. "The Care of Cream for Buttermaking." (A revised edition of No. 15.)



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*Circulars.*

## 4. "Creamery Cold Storage Bonuses."

*Fruit Crop Reports.*

A monthly Fruit Crop Report was issued from May to October. (5 Numbers.)

*Plans for Dairy Buildings and Small Cold Storages.*

Plans and specifications for small cold storages for dairy farms, country residences and creameries; plans for cold storages suitable for fruit growers or co-operative fruit packing houses; plans for cheese factories with cool curing rooms and for creameries on both the cream gathering and separator systems, have been sent to all who applied for them.

There is a growing demand for information of this kind from farmers and owners of suburban and summer homes and camps. Country merchants and grocers are also taking more interest in the subject of cold storage. I hope to have ready for distribution within the next few months a new bulletin on this subject.

## MEETINGS.

Addresses have been given at a large number of dairy and fruit meetings during the year. All the principal dairy and fruit conventions in eastern Canada and some in the western provinces have been attended by one or more members of the staff.

Mr. J. C. Chapais, Assistant Dairy Commissioner, has spent the greater part of his time lecturing throughout the province of Quebec. A special series of dairy meetings, addressed by Messrs. J. C. Chapais and J. N. Lemieux were held in the Counties of Beauce and Dorchester, during February and March. Considering the state of the roads and weather at the time, the attendance at these meetings, which averaged over 200, speaks well for the future of dairying in that district.

A series of Fruit and Orchard meetings in Middlesex, Kent and Lambton Counties were organized and attended by Chief McNeill and Inspectors Brown and Carey.

Mr. Geo. H. Barr, Chief of the Dairy Division, in addition to attending provincial conventions, has, along with Messrs. C. F. Whitley, Harvey Mitchell (Maritime Provinces), Jos. Burgess (Ontario), I. Trudel (Quebec) and V. Bojeson (British Columbia), attended a large number of local dairy meetings, called chiefly for the purpose of promoting cow testing work.

The writer was honoured during the past winter with invitations to give addresses at the annual conventions of the New York State Dairymen's Association, the Wisconsin Cheesemakers' Association and the New York State Agricultural Society. These invitations were accepted with your kind permission.

## THE USE OF LANTERN SLIDES.

This Branch has now in use three lantern outfits, with small acetylene illuminants, which are used by the speakers at many of the meetings, for the purpose of illustrating



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their remarks, and for demonstrating in such subjects as are suitable for that method. The use of the lantern has been found very helpful in bringing certain matters to the notice of the people who are interested.

### CORRESPONDENCE.

A large amount of correspondence, covering a wide range of technical subjects as well as routine matters, is carried on by this Branch.

Replies to requests for information in relation to the production of milk; the testing of milk; the manufacture and curing of cheese; the manufacture of butter; the management of cheese factories and creameries; the construction and erection of dairy, fruit and cold storage buildings; the preservation and cold storage of perishable food products; the transportation of and the commerce in all kinds of farm products, and many other topics both related and unrelated to the work of the Branch, occupies a considerable part of the time of the technical members of the staff. We encourage this correspondence because we feel that much useful work can be done in that way.

The routine correspondence with the members of the outside staff, is naturally growing as the staff is increased, and is now a very considerable item in the day's work.

### THE STAFF IN 1911-12.

The complete staff, in both the inside and the outside service, including temporary fruit and cargo inspectors and temporary clerks, numbered 94 during the past fiscal year.

In the inside service at Ottawa, there were 6 technical or semi-technical officers, and 21 clerks, 7 of whom are stenographers.

The outside staff, which numbered 67 at the maximum was made up as follows:—

#### EMPLOYED BY THE YEAR.

- 1 Assistant Dairy Commissioner. (J. C. Chapais.)
- 4 Dairy Experts.
- 9 Fruit Inspectors .
- 1 Fruit Inspector and Packing Instructor.
- 3 Special Fruit Inspectors. (At the United States Border.)
- 1 Chief Cargo Inspector. (At Montreal.)
- 1 Cargo and Refrigerator Car Inspector.
- 1 Cargo and Fruit Inspector.
- 1 Cargo Inspector.
- 1 Chief Cargo Inspector for Great Britain. .
- 4 Cargo Inspectors in Great Britain (At London, Liverpool, Glasgow and Bristol).
- 6 Recorders for the Dairy Record Centres.

#### EMPLOYED FOR PERIODS OF 4 TO 7 MONTHS.

- 16 Temporary Fruit Inspectors.
- 10 Helpers to Fruit Inspectors.
- 4 Cargo Inspectors.
- 4 Refrigerator Car Inspectors.



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## ACKNOWLEDGMENTS.

It is only fair to say that the staff as a whole has rendered faithful service during the year, and I am personally indebted for loyal support and assistance.

The general record of the staff for punctuality, industry and attention to duties is excellent.

Messrs. W. W. Moore, Chief of the Extension of Markets Division, A. McNeill, Chief of the Fruit Division and Geo. H. Barr, Chief of the Dairy Division, have all been untiring in their efforts to promote the work especially assigned to them. I have depended on these officers, with Mr. J. C. Chapais, Assistant Dairy Commissioner, and Mr. C. F. Whitley, Compiler of Dairy Records, for a large share of the work in preparing this report.

I have to acknowledge also the hearty co-operation of the Department of Inland Revenue for making analyses in connection with the administration of the dairy laws.

I have the honour to be, Sir,

Your obedient servant,

J. A. RUDDICK,

*Dairy and Cold Storage Commissioner.*







APPENDIX I.

REPORT OF J. C. CHAPAIS, ASSISTANT DAIRY COMMISSIONER.

SAINT DENIS (en bas) COUNTY OF KAMOURASKA P.Q., March 31 1912.

Mr. J. A. RUDDICK,  
Dairy and Cold Storage Commissioner,  
Ottawa.

SIR,—I beg leave to present my twenty-second report as Assistant Dairy Commissioner, which covers the period of twelve months, ended March 31, 1912.

SUMMARY.

With the exception of two Dominion conferences held in Ottawa, one in last December, and one in last February, which I have attended, I have devoted all my time to the province of Quebec and I have, during that period, made in twenty-four counties, one hundred and thirty-three visits in one hundred localities. I have delivered one hundred and fourteen lectures before fifteen thousand eight hundred and thirteen persons, of whom five hundred and sixty-five were butter and cheese makers. The average attendance at these lectures has been one hundred and thirty-eight persons. Of the one hundred localities visited, I went for the first time to thirteen of them. I have travelled seven thousand, seven hundred and thirty-one miles to perform my work.

I give here a list of the counties and localities I have visited and where I have delivered my lectures, with reference letters indicating the purpose of the meetings I thus attended.

TABLE OF VISITS AND LECTURES.

| Counties.      | Localities.                   | Visits. | Lectures. | Letters of Reference. |
|----------------|-------------------------------|---------|-----------|-----------------------|
|                | <i>Province of Ontario.</i>   |         |           |                       |
| Carleton ..... | Ottawa .....                  | 2       | 1         | a, o                  |
|                | <i>Province of Quebec.</i>    |         |           |                       |
| Beauce .....   | Beauceville .....             | 1       | 1         | c                     |
|                | St. Côme de Kennebec .....    | 1       | 1         | c                     |
|                | St. Ephrem de Tring .....     | 1       | 1         | c                     |
|                | St. Evariste de Forsyth ..... | 1       | 1         | c                     |
|                | St. George .....              | 1       | 1         | c                     |
|                | St. Honoré de Shenley .....   | 1       | 1         | c                     |
|                | St. Joseph .....              | 1       | 1         | c                     |
|                | St. Martin .....              | 1       | 1         | c                     |
|                | St. Samuel .....              | 1       | 1         | c                     |
|                | St. Sébastien .....           | 1       | 1         | c                     |
|                | St. Victor de Tring .....     | 1       | 1         | c                     |
|                | St. Vital de Lambton .....    | 1       | 1         | c                     |
|                | Ste. Marie .....              | 1       | 1         | c                     |
|                | St. Anges .....               | 1       | 1         | c                     |
| Berthier ..... | Cap St. Gabriel .....         | 1       | 1         | f                     |
|                | St. Damien .....              | 1       | 1         | f                     |
|                | St. Gabriel de Brandon .....  | 1       | 1         | f                     |



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TABLE OF VISITS AND LECTURES—*Continued.*

| Counties.             | Localities.                    | Visits. | Lectures. | Letters of References. |
|-----------------------|--------------------------------|---------|-----------|------------------------|
|                       | <i>Province of Quebec—Con.</i> |         |           |                        |
| Brome.....            | Eastman.....                   | 1       | 1         | c                      |
|                       | St. Etienne de Bolton.....     | 1       | 1         | c                      |
|                       | Sutton.....                    | 1       | 2         | d, g                   |
| Chambly.....          | St. Bruno.....                 | 1       | 1         | b                      |
| Champlain.....        | St. Adelphe.....               | 1       | 1         | c                      |
|                       | St. Louis de France.....       | 1       | 1         | c                      |
|                       | St. Maurice.....               | 1       | 1         | c                      |
|                       | St. Narcisse.....              | 1       | 1         | c                      |
|                       | St. Prosper.....               | 1       | 1         | c                      |
|                       | St. Severn.....                | 1       | 1         | c                      |
|                       | St. Stanislas.....             | 1       | 1         | c                      |
|                       | St. Théophile du Lac.....      | 1       | 1         | c                      |
|                       | St. Timothée.....              | 1       | 1         | c                      |
|                       | St. Tite.....                  | 1       | 1         | c                      |
|                       | Ste. Thècle.....               | 1       | 1         | c                      |
| Chicoutimi.....       | Chicoutimi.....                | 2       | 1         | f                      |
|                       | Jonquières.....                | 2       | 1         | f                      |
|                       | Laterrière.....                | 4       | 1         | f                      |
|                       | St. Alexis.....                | 2       | —         | f                      |
|                       | St. Alphonse.....              | 5       | 1         | f                      |
|                       | Ste. Anne.....                 | 1       | 1         | f                      |
| Dorchester.....       | Frampton.....                  | 1       | 1         | c                      |
|                       | St. Anselme.....               | 1       | 1         | c                      |
|                       | St. Bernard.....               | 1       | 1         | c                      |
|                       | St. Isidore.....               | 1       | 1         | c                      |
|                       | Ste. Claire.....               | 1       | 1         | c                      |
|                       | Ste. Hénédine.....             | 1       | 1         | c                      |
|                       | Ste. Marguerite.....           | 1       | 1         | c                      |
| Jacques Cartier... .. | Macdonald College.....         | 2       | 3         | a, c                   |
| Kamouraska.....       | St. Denis.....                 | 1       | 1         | c                      |
|                       | St. Pacôme.....                | 4       | 4         | b                      |
|                       | St. Pascal.....                | 1       | 1         | g                      |
|                       | Ste. Anne de la Pocatière..... | 1       | 1         | d, e                   |
| Lac St. Jean.....     | Chambord.....                  | 1       | 1         | f                      |
|                       | Hebertville.....               | 1       | 1         | f                      |
|                       | Mistassini.....                | 2       | 1         | f                      |
|                       | Normandin.....                 | 2       | 1         | f                      |
|                       | Peribonca.....                 | 3       | 1         | f                      |
|                       | Roberval.....                  | 3       | 2         | c, f                   |
|                       | St. Bruno.....                 | 2       | —         | f                      |
|                       | St. Gedeon.....                | 1       | 1         | f                      |
|                       | St. Jerome.....                | 1       | 1         | f                      |
|                       | St. Felicien.....              | 2       | 1         | f                      |
|                       | St. Joseph d'Alma.....         | 3       | 1         | f                      |
|                       | St. Wilbrod.....               | 1       | —         | f                      |
|                       | Ticonabe.....                  | 1       | 1         | f                      |
|                       | Vauvert.....                   | 2       | 2         | g                      |
| L'Assomption.....     | La Plaine.....                 | 1       | 1         | f                      |
| L'Islet.....          | L'Islet.....                   | 1       | 1         | c                      |
|                       | St. Aubert.....                | 1       | 1         | c                      |
|                       | St. Eugène.....                | 1       | 1         | c                      |
|                       | St. Jean Port Joli.....        | 1       | 1         | c                      |
|                       | St. Rock des Aulnaies.....     | 1       | 1         | d, c                   |
|                       | Village des Aulnaies.....      | 1       | 2         | d, c                   |
| Maskinonge.....       | St. Didace.....                | 2       | 3         | f                      |
| Megantic.....         | Inverness.....                 | 1       | 1         | a, c                   |
| Portneuf.....         | Cape Sante.....                | 1       | 1         | c                      |
|                       | Deschambault.....              | 1       | 1         | c                      |
|                       | Grondines.....                 | 1       | 1         | c                      |
|                       | Les Ecureils.....              | 2       | 1         | c, f                   |
|                       | Pointe-aux-Trembles.....       | 3       | 3         | c, g                   |
|                       | Portneuf.....                  | 1       | 1         | c                      |
|                       | St. Augustin.....              | 1       | 1         | c                      |
|                       | St. Basile.....                | 1       | 1         | c                      |
|                       | St. Gilbert.....               | 1       | 1         | c                      |
|                       | Ste. Christine.....            | 2       | 1         | c, f                   |
|                       | Ste. Jeanne de Neuville.....   | 1       | 1         | c                      |
| Quebec.....           | Qu bec City.....               | 2       | 3         | a, c                   |



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TABLE OF VISITS AND LECTURES—*Continued.*

| Counties.          | Localities.                     | Visits. | Lectures. | Letters<br>of<br>Reference. |
|--------------------|---------------------------------|---------|-----------|-----------------------------|
|                    | <i>Province of Quebec—Con.</i>  |         |           |                             |
| Quebec.. . . .     | Quebec, (banlieue). . . . .     | 1       | 1         | a                           |
| Richmond.....      | Bromptonville.....              | 1       | 1         | c                           |
|                    | St. Frs. Xavier de Brompton.... | 1       | 1         | c                           |
|                    | Windsor Mills.....              | 1       | 1         | c                           |
| St. Hyacinthe..... | St. Hyacinthe.....              | 1       | 1         | b                           |
| Shefford.....      | North Stukely.....              | 1       | 1         | c                           |
|                    | Racine or St. Theophile.....    | 1       | 1         | c                           |
|                    | St. Joseph d'Ely.....           | 1       | 1         | c                           |
|                    | St. Anne de Stukely.....        | 1       | 1         | c, f                        |
|                    | Ste. Marie d'Ely.....           | 1       | 1         | d, e                        |
| Temiscouata.....   | Notre Dame du Lac.....          | 1       | 1         | c                           |
| Terrebonne.....    | Ste. Anne des Plaines.....      | 1       | 1         | f                           |
| Two Mountains..... | La Trappe.....                  | 2       | 3         | a, g                        |
|                    | Ste. Monique.....               | 1       | 1         | —                           |
| 24                 | 100                             | 133     | 114       |                             |

Reference letters indicate:—

- 'a' Federal and provincial meetings.
- 'b' County and district meetings.
- 'c' Farmers' Clubs meetings.
- 'd' Parish meetings.
- 'e' English lectures.
- 'f' Factory inspections.
- 'g' Visits in colleges and schools.

The above given table shows that I have attended ten federal and provincial meetings, nine county and district meetings, fifty-nine farmers' clubs meetings, two parish meetings, that I have delivered twelve English lectures, that I have made forty-eight factory inspections and that I have delivered eight lectures in colleges and schools.

## FEDERAL AND PROVINCIAL MEETINGS.

The first of the provincial meetings which I attended during the last twelve months was the annual convention of the Province of Quebec Agricultural Missionaries, held at Oka on July 11 and 12. I delivered before that convention a lecture on, 'Formation, Breeding, Care and Hygiene of the Dairy Herd,' illustrated with the magic lantern. The second meeting attended was a private one on August 28, at Quebec with Mr. W. H. Bunting, an Ontario fruit grower, making a general inquiry for the department into the condition of fruit growing in the Dominion. According to your instructions, I accompanied him during part of his tour through the province of Quebec. The third meeting was that of the Quebec Pomological Society, held on August 30 at Inverness, Megantic county. At that convention, which was the summer one of the society, I delivered one lecture on 'Wind-breaks and Quick Set Hedges,' one on 'Vegetables as judged at the Exhibition' and one on 'Periodical Invasions of Insect and Fungus Pests in Orchards.' The fourth provincial meeting was one held on August 31 at Quebec in the Quebec Provincial Exhibition grounds, where I delivered a lecture on 'Fruit Growing.' On December 5 at Macdonald College, I attended my fifth provincial meeting, being the winter meeting of the Quebec Pomological Society, before which I gave a lecture on 'A Recrudescence of Orchard Pests in Eastern Quebec.' On the 6th and 7th of the same month, I attended at Ottawa a conference of the Dominion Dairy Experts, where I



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was called upon to reply on behalf of the Quebec experts to the address of welcome by the Honourable Minister of Agriculture. I attended on January 25 and 26 at Quebec the annual meeting of the Quebec Dairymen's Association before which I delivered a lecture on 'What Quebec has done for the Dairy Industry.' On February 14, 15 and 16 I attended the conference of the Fruit Growers of the Dominion, at Ottawa, representing there, as a delegate, the Quebec Pomological Society.

The last of the federal and provincial conventions which I attended during the year was that of the Quebec Society for the Protection of Plants, held at Macdonald College on March the 27th and before which I delivered a lecture on 'The New York Plum Scale.'

Besides these meetings, I also accepted an invitation to deliver two lectures before the students of the Oka Agricultural Institute on March 28.

#### COUNTY AND DISTRICT MEETINGS.

As already mentioned, I have attended nine county and district meetings. The first one was a meeting of the board of directors of the Kamouraska County Horticultural Society at St. Pacome on May 5. My subject at this meeting was 'Fruit Growing.' I attended another meeting of the same kind on July 28 at the same place.

I attended the three following county meetings while visiting various orchards with Mr. Bunting above mentioned at St. Roch des Aulnaies, Village des Aulnaies in L'Islet county and Ste. Anne de la Pocatiere in Kamouraska county on August 29. The sixth county meeting took place at St. Pacome, Kamouraska county, on September 28, on the occasion of the first horticultural exhibition of the Kamouraska County Horticultural Society. I there delivered a lecture on 'The New York Plum Scale,' which had just been discovered in the parish of St. Pacome.

On January 30, I attended a co-operative society convention of Chambly county, held at St. Bruno, and spoke on 'The Formation, Breeding, Care and Hygiene of the Dairy Herd,' illustrated with lantern slides. On March 12, I attended the annual meeting of the Kamouraska County Horticultural Society held at St. Pacome and discussed "The Possibilities of Fruit Growing in Kamouraska County."

The last county and district meeting I attended was that of St. Hyacinthe, held on March 30 by the Cow Testing Association of the District of St. Hyacinthe and where I repeated, upon request, the lecture I delivered in January before the St. Bruno meeting.

#### FARMERS' INSTITUTE MEETINGS.

During February and March in company with Mr. J. N. Lemieux, I attended a series of twenty-two Farmers' Institute meetings in Beauce, Dorchester and St. Hyacinthe counties. They were special dairy meetings and the following subjects were discussed, 'Improvement of Dairy Herds through Breeding,' 'Hygiene of the Stable,' 'Improvement of Dairy Herds through keeping Records of Production,' 'Production of Milk at a Minimum Cost,' and 'Payment of Milk according to the Fat.' All these lectures were illustrated with lantern slides.

These meetings were attended by an average of two hundred and eight farmers and amongst them two hundred and forty-nine have expressed their willingness to keep records and test the milk of 2,142 cows during the next season.

I beg to offer my most sincere thanks to the various parish priests of the parishes visited during this series of meetings for the help they have heartily given us in bringing their parishioners together.

#### LECTURES BEFORE FARMERS' CLUBS.

The meetings held by Mr. Lemieux and myself were under the auspices of the farmers' clubs of all the localities visited. Besides these twenty-two meetings, I delivered before such clubs, thirty-seven lectures, making in all fifty-nine meetings in the counties of Brome, Champlain, L'Islet, Portneuf, Richmond and Shefford.



## SESSIONAL PAPER No. 15a

## CHEESE FACTORY INSPECTION.

In May, June and July I made forty-four factory inspections and delivered lectures to the patrons of those factories in the counties of Berthier, Chicoutimi, Lake St. John, l'Assomption, Maskinonge, Terrebonne and Two Mountains. This kind of work was undertaken as already described in previous reports.

## VISITS IN SCHOOLS AND COLLEGES.

I visited this year the schools of Agricultural Household Science, one at Roberval, Lake St. John county, conducted by the Ursuline Sisters, one at Pointe-aux-Trembles, Portneuf county, conducted by the Sisters of La Congregation de Notre-Dame and one at Sutton, conducted by the Sisters of La Presentation. At the Ursuline Sisters' school, I addressed the students on 'The Part of Woman in Agriculture,' and I made a visit to the farm of the institution, in company with the sisters who had invited me specially to get information on the best method of cultivation to follow on their land, information that I have readily given them on the spot. At the other two schools, I gave my lecture on 'The Part of Woman in Agriculture.'

Besides these three schools, I visited the Oka Agricultural Institute, the Agricultural Orphans' Institute of Vauvant and the farm of the Reverend Trappist Fathers or silent monks of Mistassini.

## OFFICE WORK.

I have had in my office during the last twelve months to perform about the same amount of work as during the preceding years. It has taken much of my time to answer my numerous correspondents, to prepare memoranda, lectures and papers for the agricultural press, for my own meetings and for various other purposes. I append here a list of these papers. As some of them were written in French, some in English and some in French and English, those in French are indicated by the letter 'F.', those in English by the letter 'E.', and those in French and English by the letters 'F. & E.'

- Cleanliness in Factories.—'F.'
- Lecture for Arbor Day.—'F.'
- Whitewashing of Factories.—'F.'
- A Few Notes on Potato Culture.—'F.'
- The Island of Orleans Soft Refined Cheese.—'F.'
- Report of the Assistant Dairy Commissioner, 1911-1912.—'F. & E.'
- A Study in Knots.—'F.'
- The Law of Minimum.—'F.'
- A French-English Conversation.—'F.'
- A Talk about Eggs.—'F.'
- Some Odd Methods of Culture in the Province of Quebec.—'E.'
- How to dispose of Curd kept from Previous Day.—'F.'
- Notes on Wind Breaks and Quick Set Hedges.—'F. & E.'
- Statistics concerning a few American Creameries.—'F.'
- Domestic Economy, Mutton as Food.—'F.'
- Dalen Milking Machine.—'F.'
- 'Epis glanes' (gleaned ears).—'F.'
- Bibliography—Le Lait (Milk) by Mornoison.—'F.'
- Catalejsic Fertilizers.—'F.'
- The Biggest Cheese of the World.—'F.'
- A Recrudescence of Orchard Pests in Eastern Quebec.—'F. & E.'
- The Casein Test.—'F.'
- What Quebec has done for Dairying.—'F.'
- The New York Plum Scale.—'F. & E.'



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Sinks and Racks in Cheese Factories.—'F.'

The Part of Race in Breeding.—'F.'

Three Centuries of Agriculture in Quebec.—'E.'

Notes on the Blooming Season of Fruit in Eastern Quebec.—'E.'

## CLOSING REMARKS.

When last year I wrote the closing remarks of my twenty-first annual report, I said that the spirit of co-operation was spreading amongst our rural population. I may say that co-operation seems more and more to be the by-word of French farmers, especially in Quebec. In fact, there are now nineteen agricultural co-operative societies in that province. This, with the number of cow testing associations increasing all over, causes us to entertain great hopes for the future of dairying.

J. C. CHAPPAIS,

*Assistant Dairy Commissioner.*

## APPENDIX II.

## REPORT OF W. W. MOORE, CHIEF, EXTENSION OF MARKETS DIVISION.

SIR,—I have the honour to present herewith the report of the Extension of Markets Division for the year ending March 31, 1912.

## WORK OF THE DIVISION IN 1911-12.

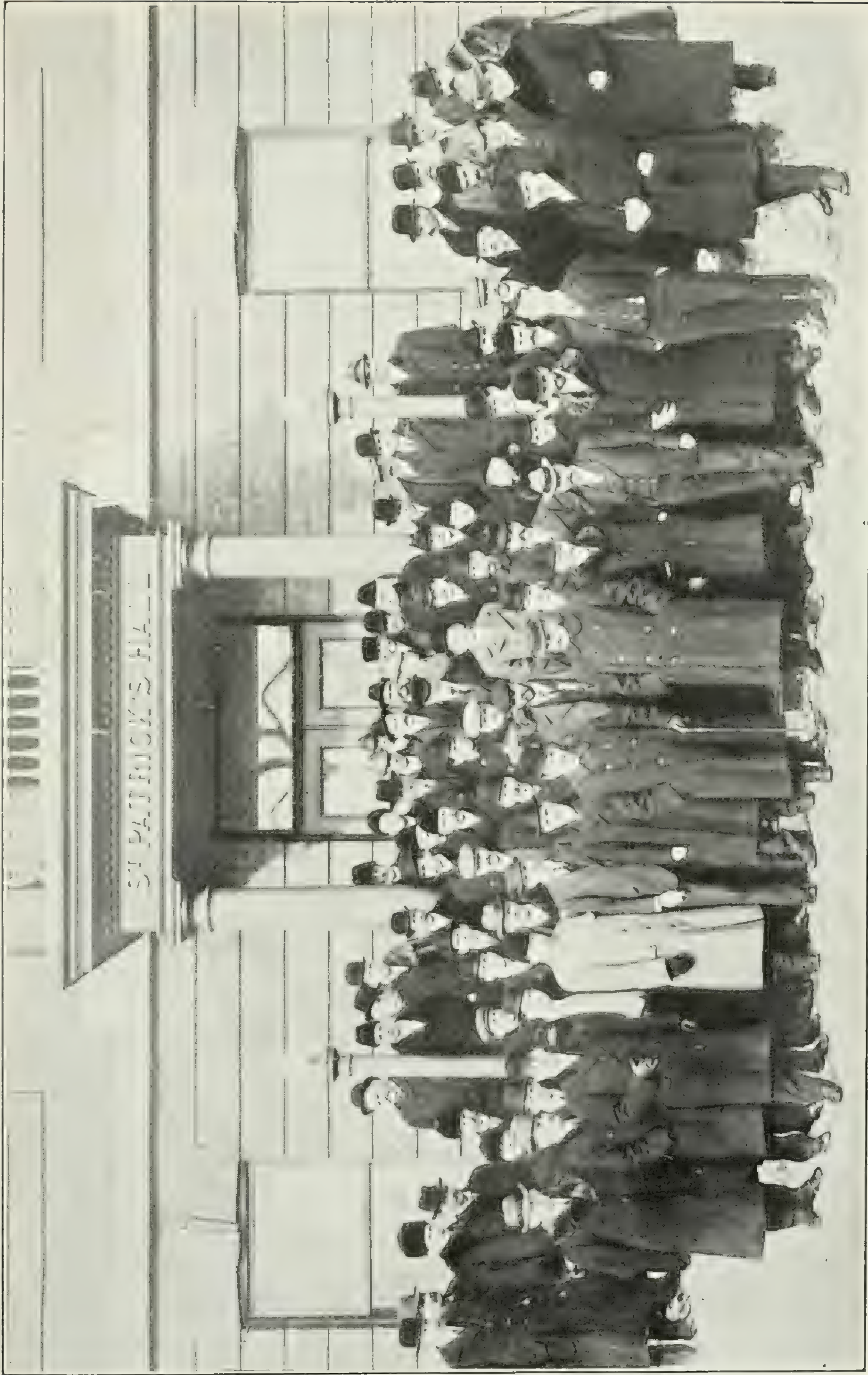
During the twelve months under review the activities of this division have been continued along lines similar to those followed in previous years. Cargo inspection has been carried on at Montreal, Quebec and Halifax in Canada, and at Liverpool, Manchester, London, Bristol and Glasgow in Great Britain. The special iced car services for the carriage of butter to Montreal and Toronto have been closely supervised and the interests of the shippers carefully protected. In September a special collection of peaches was packed and forwarded to the Festival of Empire Exhibition, London, where it formed a part of the Canadian exhibit. The peaches opened up in perfect condition and their large size, attractive appearance and fine quality evoked much favourable comment. Our weekly compilation of comparative wholesale prices of farm and food products in Canadian and United States markets was continued throughout the year and price-statements covering a number of products will be included in this report.

During the year, 19 men have been employed in the outside service of this division—13 cargo and 6 refrigerator car inspectors—but only 8 of these were engaged the year round, the others working for terms of from five to seven months.

## GROWING USEFULNESS OF THE THERMOGRAPH.

The placing of thermographs (self recording thermometers) along with perishable cargo in steamships loaded at Montreal, Quebec and Halifax, has grown to be a feature of our work. We have now over two hundred of these instruments divided into three groups, viz. those that will record for 35 days, for 14 days and for 7 days. Much the greater proportion belong to the second group as the bulk of our shipping is with Great Britain and fourteen days covers the voyage. The thirty-five day thermographs are used in ships sailing to South Africa and Australia and the seven day instruments in railway cars carrying fruit, butter, etc. In the past twelve months 666 records of



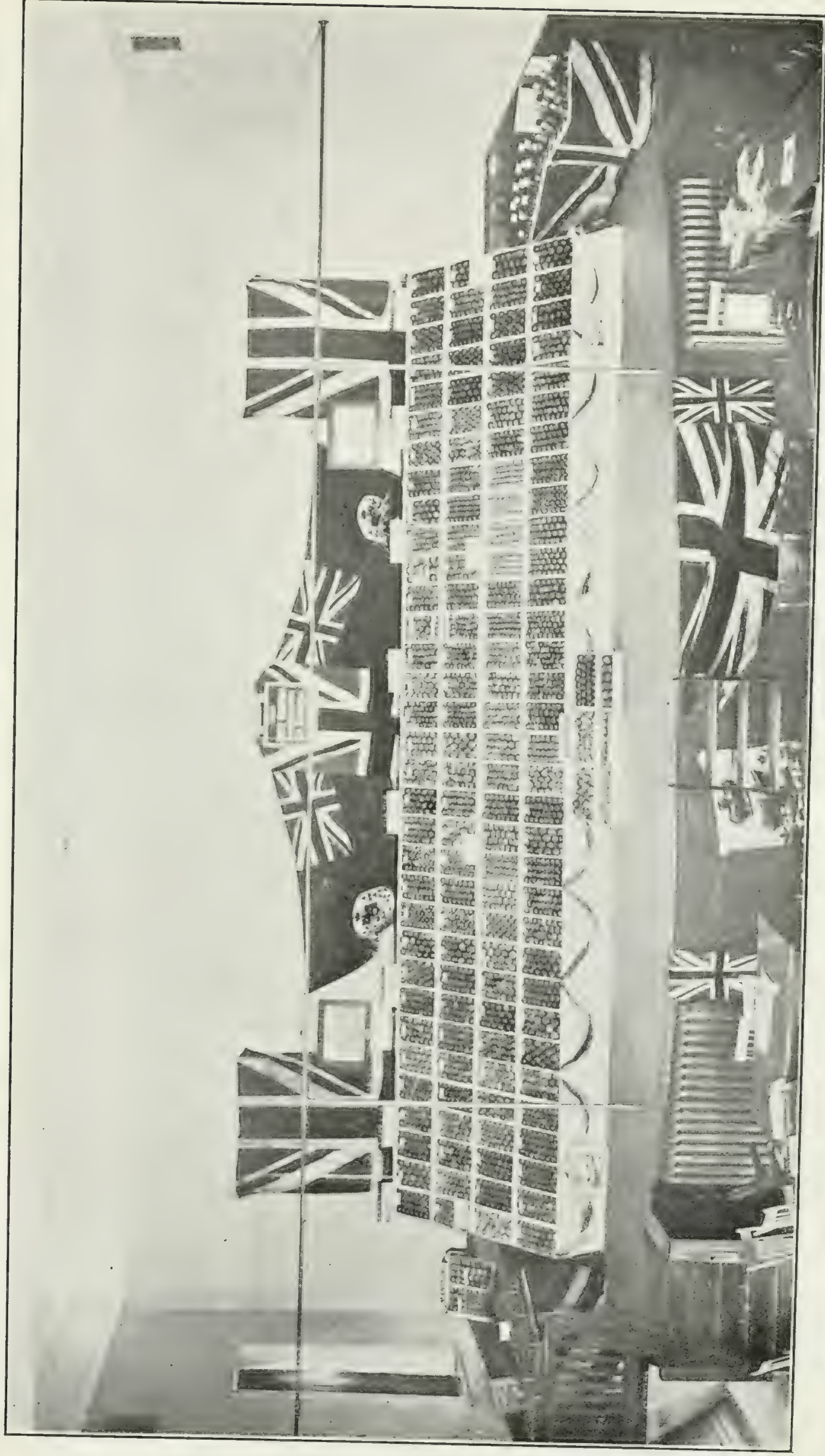


Delegates, visitors and officials, at the Third Dominion Conference of Fruit Growers. Ottawa February 14, 15 and 16, 1912.









Display of Apples at the Third Dominion Conference of Fruit Growers, Ottawa February, 14, 15 and 16, 1912.







## SESSIONAL PAPER No. 15a

temperature were obtained in ocean steamers, and 3,996 copies of these were made in this office for distribution to interested parties. This last year one of the pork packing companies in Ontario made it a point to notify this office every time they made a shipment of bacon for export in order to insure the placing of a thermograph along with their consignment in the ship. Copies of the records in which they were interested were regularly sent to this firm and they were thus supplied with exact information regarding the temperature at which their meat was carried during every hour of the voyage. This coming season we propose to use thermographs somewhat extensively in connection with rail shipments of fruit between producing points in British Columbia and the distributing centres in the prairie provinces.

## MARKET GRADES AND THEIR INFLUENCE ON QUALITY.

The farmer in Canada to-day, whether engaged in dairying, fruit growing, stock raising or general farming, produces primarily for market and it is necessary, therefore, that he should give the most careful consideration to the marketing end of his business, otherwise he is unlikely to receive the fullest recompense for his skill and labour. This was not the case years ago when the country was sparsely settled, the farms but clearings surrounded by forests, and the methods and implements crude and primitive. In those days the farmer sowed and reaped and tended his stock mainly for the purpose of providing for the needs of his household, but in the years that have intervened the conditions under which farming has been carried on have been gradually changing and the prices of agricultural products have undergone many fluctuations. All the time, however, owing to the tremendous improvement in transportation facilities and in means of communication, prices of farm products have been growing less local in character and more subject to influences which are entirely outside the control of the individual producer.

One effect of the pressure of international competition has been to make prices more uniform throughout the world's markets and, at the same time, to widen the range of prices through the fixing of many different grades of quality. These grades, or standards, represent the skill and care that have been exercised in the production and packing of the product, or its preparation for market in one form or another, and it is by means of these grades that intelligence and care on the part of the producer is rewarded. It is therefore true that discriminatory grades, if adhered to by buyers and sellers, are a good thing for those who produce fine products and understand how to prepare them attractively for market. If all the butter, cheese, eggs, &c., marketed in Canada had to be sold at first hand strictly according to quality, condition and appearance, it would soon prove effective in raising the average level of quality and bring about an improvement in condition and appearance as well. So long, however, as country buyers continue to lump good and bad together and pay an average price therefor, it will be difficult to increase to any marked extent the production of the finest grades. If it could be established, however, that products would be bought strictly on their merits and that prices would be graded according to quality, condition and finish, a vast improvement would quickly take place.

## COMPARATIVE PRICES IN CANADIAN AND UNITED STATES MARKETS.

In last year's report of this Division statements were included showing wholesale quotations for certain products in the leading markets in Canada and the United States, and this year I present a similar comparison for dairy produce, eggs, live stock, &c., for each week of the year under review.

Very few people realize how difficult it is to compile a statement that will show with absolute fairness the market price of a particular product on the same day in a number of different markets. In the first place it is essential that the same grade of quality be taken as a standard for each market; but when an international comparison



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is attempted it at once becomes evident that each country has its own peculiar classifications and grades and unless the statistician is well posted regarding the grades in use in the markets concerned and just what they call for, an accurate comparative quotation will hardly be obtained. Not only is there variation in the grades and selling conditions in different countries, but also in the several markets in any one country. For instance, in the Toronto market live hogs may be bought either 'F.O.B. Country Points,' or 'Fed and Watered,' Toronto, or 'Weighed off Cars,' Toronto. On the other hand in the Montreal and Winnipeg markets the custom is to buy hogs on a 'weighed off cars' basis. In Chicago and in other large markets in the United States live stock quotations as a rule are on a 'fed and watered' basis. In Toronto there is a difference of from 50 cents to 65 cents per hundredweight between a quotation 'F.O.B. country points' and one 'weighed off cars,' and at least 25 cents per hundredweight between an 'F.O.B.' and a 'fed and watered' price.

In the New York market, quotations are usually obtainable on ten grades of creamery butter, three grades of 'State dairy' and four grades of 'Process,' to say nothing of 'Factory' and 'Packing stock.' There is no fixed rule but quotations for each particular grade are supposed to be based upon actual sales to jobbers. Supply and demand determine the price relation of one grade to another and at times the range is extremely narrow. It is generally understood that butter scoring 92 points and over is classed as 'Specials' and 90 to 91 points as 'Extras.\*' Then follows 'First,' 'Seconds' and 'Thirds.' The remaining five grades are the same as the foregoing except that they apply to 'held' or stored butter. In Montreal, quotations are generally restricted to two grades of creamery and two grades of dairy. In the latter market wholesale prices of butter as published mean the price quoted to the jobber or large retailer by the big wholesale dealer or exporter who buys from the creamery direct. In Toronto, on the other hand, quotations published in the various papers as a rule refer to the price paid to the creamery men and country merchants by the wholesale dealers in the city. Here then we have two methods of reporting prices which preclude an equitable comparison, yet this fact is scarcely ever taken into account when Montreal and Toronto prices are compared.

In addition to the matter of grades and market terms there is the difficulty of getting quotations for the same day in the week in some seven or eight widely separated centres and the risk that a published quotation for one market may mean the top price realized during the day, while in another the average of the day's sales may be intended without, however, it being so stated in either case. Under present conditions in this country it is a hard proposition to prepare for daily or weekly publication a market report that will be accurate in every department and fairly reflect the feel and trend of the market on the day covered by the report. It can be done but it takes a level-headed, capable and experienced man to do it, and in view of the inherent difficulties it is not surprising that the market pages, in some of the publications in Canada, are useless because of inexperienced reporters and the lack of a careful revision before each issue goes to press, the same figures standing for weeks at a time although the market may have fluctuated widely in the meantime.

A standardization of grades in the leading markets of this country for butter, eggs, dressed poultry and live stock is badly needed and if it could be brought about it would simplify the buying and selling of these products and remove the ambiguity which now more or less surrounds many of the quotations which appear in the market columns of the press.

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\* Since this report was written the New York Mercantile Exchange has issued new rules governing the grading of butter under which the term 'Specials' has been eliminated and 'Extras' has taken its place. According to the new rules 'Extras' are divided into class A scoring 93 points or higher, class B 91 points or higher; Firsts, class A 88 to 92 points, class B 86 to 90 points; Second, class A 83 to 87 points, class B 81 to 85 points; Thirds, class A 77 to 82 points, class B 75 to 80 points.



## SESSIONAL PAPER No. 15a

Wholesale Prices of Butter Each Week from April 5, 1911, to March 27, 1912.

(From Boston Chamber of Commerce, "Producers' Price Current," "Daily Trade Bulletin," "Canadian Farm" and "Journal of Commerce.")

| Week.    |      | BOSTON.   | NEW YORK. | CHICAGO.  | HALIFAX.           | MONTREAL.          | TORONTO.           | WINNIPEG.          |
|----------|------|-----------|-----------|-----------|--------------------|--------------------|--------------------|--------------------|
|          |      | "Extras." | "Extras." | "Extras." | "Creamery Solids." | "Creamery Solids." | "Creamery Solids." | "Creamery Solids." |
| 1911.    |      | Cts.      | Cts.      | Cts.      | Cts.               | Cts.               | Cts.               | Cts.               |
| April    | 5..  | 22 - ..   | 21 - ..   | 21 - ..   | 22 - 23            | 25 - 25½           | 23 - 24            | 24 - 26            |
| "        | 12.. | .....     | 20½ - ..  | 21 - ..   | 22 - 23            | 25 - 25½           | 24 - 25            | 24 - 26            |
| "        | 19.. | 22½ - ..  | 22 - ..   | 21 - ..   | 22 - 23            | 23½ - 24           | 23 - 24            | 23 - 24            |
| "        | 26.. | 22 - ..   | 22 - ..   | 21 - ..   | 22 - 23            | .. - 22            | 23 - 24            | 27 - 28            |
| May      | 3..  | 22 - ..   | 21½ - ..  | 21 - ..   | 22 - 23            | 20½ - 21           | 23 - 24            | 27 - 28            |
| "        | 10.. | 22½ - ..  | 22 - ..   | 21 - ..   | 22 - 23            | 21 - 22            | 23 - 24            | 27 - 28            |
| "        | 17.. | .....     | 21 - ..   | 21 - ..   | 23 - 26            | .. - 22            | 22 - 23            | 27 - 28            |
| "        | 24.. | 23 - ..   | 22 - ..   | 21 - ..   | 23 - 26            | 21½ - 22           | 21 - 22            | 23½ - 24½          |
| "        | 31.. | 24½ - ..  | 22½ - 23  | 23 - ..   | 23 - 26            | 21 - 21½           | 21 - 22            | 20 - 25            |
| June     | 7..  | 23½ - ..  | 22 - 22½  | 21 - ..   | 23 - 24            | .. - 21½           | 21 - 22            | 20 - 25            |
| "        | 14.. | 24 - ..   | 23 - ..   | 21 - ..   | 23 - 24            | 22 - 22½           | 21 - 21½           | 20 - 21            |
| "        | 21.. | .....     | 23 - ..   | 22 - ..   | 20 - 22            | 22 - 22½           | 20 - 21½           | 20 - 21            |
| "        | 28.. | 25 - ..   | 24 - ..   | 23 - ..   | 20 - 25            | 22 - 22½           | 21 - 22            | 20 - 21            |
| July     | 5..  | 25½ - ..  | 24 - ..   | 23 - ..   | 20 - 25            | 22½ - 23½          | 21 - 22            | 20 - 21            |
| "        | 12.. | 25½ - ..  | 24 - 24½  | 24 - ..   | 20 - 25            | 21½ - 22           | 21 - 22            | 20 - 21            |
| "        | 19.. | 26 - ..   | 25 - ..   | 24 - ..   | 20 - 25            | 22½ - 23½          | 21 - 22            | 19 - 20            |
| "        | 26.. | .. - 27   | 26 - ..   | 25 - ..   | 20 - 25            | 22½ - 23           | 21 - 22            | 19 - 20            |
| August   | 2..  | 27 - ..   | 26 - ..   | 26 - ..   | 20 - 25            | 23½ - 23¾          | 22 - 23            | 19 - 20            |
| "        | 9..  | .. - 27   | 26 - ..   | 26 - ..   | 20 - 25            | 23½ - 24           | 22 - 23            | 19 - 20            |
| "        | 16.. | .. - 27   | 26 - ..   | 25 - ..   | 20 - 25            | 24½ - 24½          | 22 - 23            | 19 - 20            |
| "        | 23.. | 27½ - 28  | 27 - ..   | 25 - ..   | 20 - 25            | 24½ - 24½          | 23 - 24            | 19 - 20            |
| "        | 30.. | 27 - ..   | .. - 26   | 25 - ..   | 20 - 25            | 25¾ - 26           | 23 - 24            | 19 - 20            |
| Sept.    | 6..  | 27 - ..   | 26 - 26½  | 25 - ..   | 20 - 25            | 26 - 26½           | 23 - 24            | 19 - 20            |
| "        | 13.. | 27½ - ..  | 26 - 26½  | 26 - ..   | 20 - 25            | 26 - 26½           | 23 - 24            | 19 - 20            |
| "        | 20.. | .. - 28   | 26 - 26½  | 26 - ..   | 20 - 25            | 25¾ - 26           | 23 - 24            | 19 - 20            |
| "        | 27.. | 28½ - ..  | 27½ - 28  | 26½ - ..  | 20 - 25            | 25¾ - 26½          | 23 - 24            | 19 - 20            |
| October  | 4..  | 29½ - ..  | 29 - ..   | 27½ - ..  | 20 - 25            | .. - 26½           | 23 - 24            | 19 - 20            |
| "        | 11.. | 30½ - ..  | 31 - ..   | 29 - ..   | 20 - 25            | 26½ - 27           | 23 - 24            | 19 - 20            |
| "        | 18.. | .. - 30½  | 30 - ..   | 29 - ..   | 20 - 25            | .. - 27½           | 23 - 24            | 19 - 20            |
| "        | 25.. | 31 - ..   | 31 - 31½  | 29½ - ..  | 20 - 25            | 27½ - 27½          | 24 - 25            | 19 - 20            |
| November | 1..  | 31½ - ..  | 32 - 32½  | 31 - ..   | 25 - 26½           | 27 - 27½           | 24 - 25            | 22 - 24½           |
| "        | 8..  | 31½ - ..  | 32½ - ..  | 31 - ..   | 24 - 24½           | 27 - 27½           | 26 - 26½           | 22 - 25            |
| "        | 15.. | .. - 32½  | 33½ - ..  | 32 - ..   | 27½ - 28           | 28 - 28½           | 26 - 27            | 25 - 26½           |
| "        | 22.. | 33 - ..   | 35 - ..   | 33 - ..   | 27½ - 28           | 28½ - 29           | 27 - 29            | 25 - 26½           |
| "        | 29.. | 34 - ..   | 36½ - ..  | 36 - ..   | 27½ - 28           | 30 - 30½           | 28 - 30            | 28 - 30            |
| December | 6..  | 35 - ..   | 38 - ..   | 37 - ..   | 27½ - 28           | 30½ - 31½          | 28 - 30            | 28 - 31            |
| "        | 13.. | 34 - ..   | 34 - ..   | 35 - ..   | 27½ - 28           | 31 - 31½           | 28 - 29            | 28 - 31            |
| "        | 20.. | 35 - ..   | 38 - ..   | 35 - ..   | 27½ - 28           | 30½ - 31½          | 29 - 30            | 28 - 30            |
| "        | 27.. | .. - 36   | 37 - ..   | 36 - ..   | 27½ - 28           | 31½ - 32           | 29 - 30            | 28 - 30            |
| 1912.    |      |           |           |           |                    |                    |                    |                    |
| January  | 3..  | 36 - ..   | 36½ - 37  | 36 - ..   | 27½ - 28           | 31½ - 32½          | 29 - 30            | 29 - 31            |
| "        | 10.. | 36½ - ..  | 38½ - 39  | 36 - ..   | 27½ - 28           | 31 - 31½           | 30 - 32            | 30 - 32            |
| "        | 17.. | 38 - ..   | 40½ - 41  | 40 - ..   | 27½ - 28           | 32 - 32½           | 30 - 32            | 30 - 32            |
| "        | 24.. | .. - 38   | 37 - ..   | 36 - ..   | 27½ - 28           | 32 - 33            | 27 - 29            | 30 - 32            |
| "        | 31.. | 36 - ..   | 31 - 34   | 36 - ..   | 27½ - 28           | 33 - 34            | 30 - 32            | 30 - 32            |
| February | 7..  | 34½ - ..  | 31½ - ..  | 32 - ..   | 27½ - 28           | 35 - 36            | 32 - 34            | 30 - 32            |
| "        | 14.. | .. - 34   | 31½ - ..  | 30 - ..   | 27½ - 28           | 33 - 34            | 32 - 34            | 30 - 32            |
| "        | 21.. | 30 - ..   | .. - 28½  | 27 - ..   | 27½ - 28           | 33 - 34            | 32 - 34            | 30 - 33            |
| "        | 28.. | 31½ - ..  | .. - 30½  | 28 - ..   | 27½ - 28           | 33 - 34            | 34 - 35            | 30 - 33            |
| March    | 6..  | 32 - ..   | .. - 31   | 30 - ..   | 27½ - 28           | 33 - 34            | 34 - 35            | 30 - 33            |
| "        | 13.. | 31½ - ..  | 29 - ..   | 29 - ..   | 27½ - 28           | 33 - 34            | 34 - 35            | 30 - 33            |
| "        | 20.. | 32 - ..   | 31 - ..   | 29 - ..   | 27½ - 28           | 33½ - 34           | 33 - 34            | 33 - 34            |
| "        | 27.. | 33 - ..   | 31½ - ..  | 30 - ..   | 27½ - 28           | 34½ - 35           | 33 - 34            | 33 - 34            |



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Wholesale Prices of Cheese, Each Week from April 5, 1911, to March 27, 1912.

(From Boston Chamber of Commerce, "Producers' Price Current," "Daily Trade Bulletin" and "The Canadian Farm.")

|       |        | BOSTON.   | NEW YORK.   | CHICAGO.  | HALIFAX.  | Montreal.   | Toronto.  | Winnipeg.   |
|-------|--------|---|---|---|---|---|---|---|
| Week. |        | " N. Y.<br>Twins."  | Whole milk<br>" Fancy<br>Coloured."                             | " Twins."   | " Westerns "  | " Westerns "  | " Westerns "  | " Westerns "  |
| 1911. |        | Cts.  | Cts.  | Cts.  | Cts.  | Cts.  | Cts.  | Cts.  |
| April | 5....  | 12 <sup>1</sup> / <sub>2</sub> - ..                             | 13 <sup>1</sup> / <sub>4</sub> - 14                             | 12 - ..   | 12 - 13 <sup>1</sup> / <sub>2</sub>                             | 12 <sup>1</sup> / <sub>4</sub> - 12 <sup>1</sup> / <sub>2</sub> | 14 - 14 <sup>1</sup> / <sub>4</sub>                             | 12 - 15   |
| "     | 12.... | ..  | 13 - 13 <sup>1</sup> / <sub>2</sub>                             | 12 - ..   | 12 - 13 <sup>1</sup> / <sub>2</sub>                             | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 14 - 14 <sup>1</sup> / <sub>4</sub>                             | 12 - 14 <sup>1</sup> / <sub>2</sub>                             |
| "     | 19.... | ..  | 13 <sup>1</sup> / <sub>4</sub> - 13 <sup>1</sup> / <sub>2</sub> | 12 - ..   | 12 - 13 <sup>1</sup> / <sub>2</sub>                             | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 14 - 14 <sup>1</sup> / <sub>4</sub>                             | 12 - 14 <sup>1</sup> / <sub>2</sub>                             |
| "     | 26.... | 10 <sup>1</sup> / <sub>2</sub> - 11 <sup>1</sup> / <sub>4</sub> | 13 <sup>1</sup> / <sub>2</sub> - ..                             | 12 - ..   | 12 - 13 <sup>1</sup> / <sub>2</sub>                             | 11 <sup>1</sup> / <sub>2</sub> - 11 <sup>1</sup> / <sub>2</sub> | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 12 - 14 <sup>1</sup> / <sub>2</sub>                             |
| May   | 3....  | 11 <sup>1</sup> / <sub>2</sub> - ..                             | 13 <sup>1</sup> / <sub>2</sub> - ..                             | 10 <sup>1</sup> / <sub>2</sub> - ..                             | 12 - 13 <sup>1</sup> / <sub>2</sub>                             | 11 <sup>1</sup> / <sub>2</sub> - 11 <sup>1</sup> / <sub>2</sub> | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 12 - 14 <sup>1</sup> / <sub>2</sub>                             |
| "     | 10.... | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 13 <sup>1</sup> / <sub>2</sub> - ..                             | 10 <sup>1</sup> / <sub>2</sub> - ..                             | 12 - 13 <sup>1</sup> / <sub>2</sub>                             | 11 <sup>1</sup> / <sub>2</sub> - 11 <sup>1</sup> / <sub>2</sub> | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 12 - 15   |
| "     | 17.... | ..  | 13 <sup>1</sup> / <sub>2</sub> - ..                             | 10 <sup>1</sup> / <sub>2</sub> - ..                             | 13 <sup>1</sup> / <sub>2</sub> - 14                             | .. - 11   | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 12 - 15   |
| "     | 24.... | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 13 - 13 <sup>1</sup> / <sub>2</sub>                             | 10 <sup>1</sup> / <sub>2</sub> - ..                             | 13 <sup>1</sup> / <sub>4</sub> - 14                             | 11 <sup>1</sup> / <sub>2</sub> - 11                             | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 13 - 15   |
| "     | 31.... | 11 - ..   | 13 - 13 <sup>1</sup> / <sub>2</sub>                             | 10 - ..   | 13 <sup>1</sup> / <sub>2</sub> - 14                             | 10 - 10 <sup>1</sup> / <sub>2</sub>                             | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 13 - 15   |
| June  | 7....  | ..  | 13 - 13 <sup>1</sup> / <sub>2</sub>                             | 10 - ..   | 13 <sup>1</sup> / <sub>2</sub> - 14                             | 11 <sup>1</sup> / <sub>2</sub> - 11 <sup>1</sup> / <sub>2</sub> | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 13 - 15   |
| "     | 14.... | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 13 - 13 <sup>1</sup> / <sub>2</sub>                             | 10 - ..   | 13 <sup>1</sup> / <sub>2</sub> - 14                             | 11 <sup>1</sup> / <sub>4</sub> - 11 <sup>1</sup> / <sub>2</sub> | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 13 - 14   |
| "     | 21.... | ..  | 13 - 13 <sup>1</sup> / <sub>2</sub>                             | 10 - ..   | 13 <sup>1</sup> / <sub>2</sub> - 14                             | 11 <sup>1</sup> / <sub>2</sub> - 11 <sup>1</sup> / <sub>2</sub> | 11 <sup>1</sup> / <sub>2</sub> - 12                             | 13 - 14   |
| "     | 28.... | 12 - 12 <sup>1</sup> / <sub>2</sub>                             | 11 <sup>3</sup> / <sub>4</sub> - ..                             | 10 - 10 <sup>1</sup> / <sub>4</sub>                             | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 11 <sup>3</sup> / <sub>4</sub> - 11                             | 12 - 12 <sup>1</sup> / <sub>2</sub>                             | 13 - 14   |
| July  | 5....  | 12 <sup>1</sup> / <sub>2</sub> - ..                             | 11 <sup>3</sup> / <sub>4</sub> - ..                             | 10 - 10 <sup>1</sup> / <sub>4</sub>                             | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 11 <sup>3</sup> / <sub>4</sub> - 11                             | 12 - 12 <sup>1</sup> / <sub>4</sub>                             | 13 - 14   |
| "     | 12.... | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 11 <sup>3</sup> / <sub>4</sub> - ..                             | 10 <sup>1</sup> / <sub>2</sub> - 11                             | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 11 <sup>3</sup> / <sub>4</sub> - 11                             | 12 - 12 <sup>1</sup> / <sub>2</sub>                             | 13 - 14   |
| "     | 19.... | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 11 <sup>3</sup> / <sub>4</sub> - ..                             | 10 <sup>1</sup> / <sub>2</sub> - 11                             | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 11 <sup>3</sup> / <sub>4</sub> - 11 <sup>3</sup> / <sub>4</sub> | 12 - 12 <sup>1</sup> / <sub>2</sub>                             | 13 - 14   |
| "     | 26.... | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 11 <sup>3</sup> / <sub>4</sub> - ..                             | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 11 <sup>3</sup> / <sub>4</sub> - 12 <sup>1</sup> / <sub>4</sub> | 12 <sup>1</sup> / <sub>2</sub> - 12 <sup>3</sup> / <sub>4</sub> | 13 - 14   |
| Aug.  | 2....  | 13 - ..   | 12 - ..   | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 12 <sup>1</sup> / <sub>4</sub> - 12 <sup>1</sup> / <sub>4</sub> | 12 <sup>3</sup> / <sub>4</sub> - 13                             | 13 - 14   |
| "     | 9....  | 13 <sup>1</sup> / <sub>4</sub> - ..                             | 12 <sup>1</sup> / <sub>4</sub> - ..                             | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 12 <sup>1</sup> / <sub>2</sub> - 12 <sup>3</sup> / <sub>4</sub> | 12 <sup>3</sup> / <sub>4</sub> - 13                             | 13 - 14   |
| "     | 16.... | 13 - 13 <sup>1</sup> / <sub>4</sub>                             | 12 <sup>1</sup> / <sub>4</sub> - ..                             | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 12 <sup>1</sup> / <sub>2</sub> - 13 <sup>1</sup> / <sub>2</sub> | 12 <sup>3</sup> / <sub>4</sub> - 12 <sup>3</sup> / <sub>4</sub> | 13 <sup>1</sup> / <sub>4</sub> - 13 <sup>1</sup> / <sub>2</sub> | 13 - 14   |
| "     | 23.... | 13 <sup>1</sup> / <sub>4</sub> - 13 <sup>1</sup> / <sub>2</sub> | 12 <sup>3</sup> / <sub>4</sub> - ..                             | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 12 <sup>1</sup> / <sub>2</sub> - 13                             | 12 <sup>3</sup> / <sub>4</sub> - 13 <sup>1</sup> / <sub>2</sub> | 13 <sup>1</sup> / <sub>2</sub> - 14                             | 13 - 14   |
| "     | 30.... | 13 <sup>1</sup> / <sub>2</sub> - ..                             | 13 - 13 <sup>1</sup> / <sub>4</sub>                             | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 13 - 13 <sup>1</sup> / <sub>4</sub>                             | 13 <sup>3</sup> / <sub>4</sub> - 13 <sup>3</sup> / <sub>4</sub> | 14 - 14 <sup>1</sup> / <sub>4</sub>                             | 13 - 14   |
| Sept. | 6....  | 13 <sup>1</sup> / <sub>2</sub> - ..                             | 13 - 13 <sup>1</sup> / <sub>4</sub>                             | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 13 - 13 <sup>1</sup> / <sub>4</sub>                             | 13 <sup>1</sup> / <sub>2</sub> - 13 <sup>3</sup> / <sub>4</sub> | 13 <sup>3</sup> / <sub>4</sub> - 14                             | 13 - 14   |
| "     | 13.... | 13 <sup>1</sup> / <sub>2</sub> - 14                             | 13 <sup>1</sup> / <sub>4</sub> - ..                             | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 13 - 13 <sup>1</sup> / <sub>4</sub>                             | 14 - 14 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>1</sup> / <sub>2</sub> - 15                             | 13 - 14   |
| "     | 20.... | 14 <sup>1</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>2</sub> | 13 <sup>3</sup> / <sub>4</sub> - ..                             | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 13 - 13 <sup>1</sup> / <sub>4</sub>                             | .. - 15   | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> | 13 - 14   |
| "     | 27.... | 14 <sup>3</sup> / <sub>4</sub> - ..                             | 14 <sup>1</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>2</sub> | 11 - 11 <sup>1</sup> / <sub>2</sub>                             | 13 - 13 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> | 13 - 14 <sup>1</sup> / <sub>4</sub>                             |
| Oct.  | 4....  | 15 - ..   | 14 <sup>1</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>2</sub> | 12 - 12 <sup>1</sup> / <sub>2</sub>                             | 13 - 13 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>1</sup> / <sub>2</sub> - 14 <sup>1</sup> / <sub>2</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> | 13 - 14 <sup>1</sup> / <sub>4</sub>                             |
| "     | 11.... | 15 - 15 <sup>1</sup> / <sub>4</sub>                             | 14 <sup>1</sup> / <sub>4</sub> - ..                             | 13 - ..   | 14 - 14 <sup>1</sup> / <sub>4</sub>                             | 14 <sup>1</sup> / <sub>2</sub> - 14 <sup>1</sup> / <sub>2</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> | 13 - 14 <sup>1</sup> / <sub>4</sub>                             |
| "     | 18.... | 15 - ..   | 14 - ..   | 13 - ..   | 14 - 14 <sup>1</sup> / <sub>4</sub>                             | 13 <sup>3</sup> / <sub>4</sub> - 14                             | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> | 13 - 14 <sup>1</sup> / <sub>4</sub>                             |
| "     | 25.... | .. - 15   | 14 <sup>1</sup> / <sub>4</sub> - ..                             | 13 <sup>1</sup> / <sub>2</sub> - ..                             | 14 - 14 <sup>1</sup> / <sub>4</sub>                             | 13 <sup>3</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>4</sub> | 14 <sup>3</sup> / <sub>4</sub> - 15                             | 13 - 14 <sup>1</sup> / <sub>4</sub>                             |
| Nov.  | 1....  | 15 - ..   | 14 <sup>3</sup> / <sub>4</sub> - ..                             | 13 <sup>1</sup> / <sub>2</sub> - ..                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 13 <sup>3</sup> / <sub>4</sub> - 14                             | 14 <sup>3</sup> / <sub>4</sub> - 15                             | 13 - 14 <sup>1</sup> / <sub>4</sub>                             |
| "     | 8....  | 15 - ..   | 14 <sup>3</sup> / <sub>4</sub> - ..                             | 13 <sup>1</sup> / <sub>2</sub> - ..                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 - 14 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>3</sup> / <sub>4</sub> - 15                             | 13 - 14 <sup>1</sup> / <sub>4</sub>                             |
| "     | 15.... | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 - 15 <sup>1</sup> / <sub>4</sub>                             | 13 <sup>1</sup> / <sub>2</sub> - 14                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>1</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>4</sub> | 14 <sup>3</sup> / <sub>4</sub> - 15                             | 13 - 14 <sup>1</sup> / <sub>4</sub>                             |
| "     | 22.... | 15 <sup>1</sup> / <sub>2</sub> - ..                             | 15 - 15 <sup>1</sup> / <sub>4</sub>                             | 14 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>1</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>4</sub> | 14 - 14 <sup>1</sup> / <sub>2</sub>                             | 13 - 14 <sup>1</sup> / <sub>4</sub>                             |
| "     | 29.... | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>3</sup> / <sub>4</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> | 14 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 - 14 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>1</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>2</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> |
| Dec.  | 6....  | 15 <sup>3</sup> / <sub>4</sub> - 16                             | 15 <sup>3</sup> / <sub>4</sub> - 15 <sup>3</sup> / <sub>4</sub> | 14 <sup>1</sup> / <sub>2</sub> - ..                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>1</sup> / <sub>2</sub> - 14 <sup>1</sup> / <sub>2</sub> | 14 <sup>1</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>2</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> |
| "     | 13.... | 15 <sup>3</sup> / <sub>4</sub> - 16                             | 15 <sup>3</sup> / <sub>4</sub> - ..                             | 14 <sup>1</sup> / <sub>2</sub> - ..                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>1</sup> / <sub>2</sub> - 14 <sup>1</sup> / <sub>2</sub> | 14 <sup>1</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>2</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> |
| "     | 20.... | 16 - ..   | 16 <sup>1</sup> / <sub>4</sub> - ..                             | 14 <sup>1</sup> / <sub>2</sub> - ..                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>1</sup> / <sub>2</sub> - 14 <sup>1</sup> / <sub>2</sub> | 14 <sup>1</sup> / <sub>4</sub> - 14 <sup>1</sup> / <sub>2</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> |
| "     | 27.... | 16 - 16 <sup>1</sup> / <sub>2</sub>                             | 16 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>3</sup> / <sub>4</sub> - 15                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>4</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>4</sub> |
| 1912. |        |   |   |   |   |   |   |   |
| Jan.  | 3....  | 16 - 16 <sup>1</sup> / <sub>2</sub>                             | 16 - 16 <sup>1</sup> / <sub>4</sub>                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>3</sup> / <sub>4</sub> - 15                             | 15 <sup>3</sup> / <sub>4</sub> - 16 <sup>1</sup> / <sub>4</sub> | 15 <sup>1</sup> / <sub>4</sub> - 15 <sup>3</sup> / <sub>4</sub> |
| "     | 10.... | 16 <sup>1</sup> / <sub>2</sub> - 16 <sup>3</sup> / <sub>4</sub> | 16 <sup>1</sup> / <sub>4</sub> - 16 <sup>1</sup> / <sub>2</sub> | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 14 <sup>3</sup> / <sub>4</sub> - 15 <sup>1</sup> / <sub>2</sub> | 15 <sup>3</sup> / <sub>4</sub> - 16 <sup>1</sup> / <sub>4</sub> | 16 <sup>1</sup> / <sub>4</sub> - 16 <sup>3</sup> / <sub>4</sub> |
| "     | 17.... | 16 <sup>3</sup> / <sub>4</sub> - ..                             | 16 <sup>1</sup> / <sub>2</sub> - 16 <sup>3</sup> / <sub>4</sub> | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 - 16 <sup>3</sup> / <sub>4</sub>                             | 16 <sup>1</sup> / <sub>4</sub> - 16 <sup>3</sup> / <sub>4</sub> |
| "     | 24.... | 17 - ..   | 16 <sup>3</sup> / <sub>4</sub> - ..                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 - 16 <sup>3</sup> / <sub>4</sub>                             | 16 <sup>1</sup> / <sub>4</sub> - 16 <sup>3</sup> / <sub>4</sub> |
| "     | 31.... | 17 - 17 <sup>1</sup> / <sub>2</sub>                             | 17 - ..   | 16 <sup>1</sup> / <sub>2</sub> - 16 <sup>3</sup> / <sub>4</sub> | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 - 16 <sup>3</sup> / <sub>4</sub>                             | 16 <sup>1</sup> / <sub>4</sub> - 16 <sup>3</sup> / <sub>4</sub> |
| Feb.  | 7....  | 17 <sup>1</sup> / <sub>2</sub> - 18                             | 16 <sup>3</sup> / <sub>4</sub> - ..                             | 16 <sup>1</sup> / <sub>2</sub> - 16 <sup>1</sup> / <sub>4</sub> | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 - 16 <sup>3</sup> / <sub>4</sub>                             | 16 <sup>1</sup> / <sub>4</sub> - 16 <sup>3</sup> / <sub>4</sub> |
| "     | 14.... | .. - 18   | 17 - ..   | 17 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 - 16 <sup>3</sup> / <sub>4</sub>                             | 16 <sup>1</sup> / <sub>4</sub> - 16 <sup>3</sup> / <sub>4</sub> |
| "     | 21.... | 18 - ..   | 17 <sup>1</sup> / <sub>4</sub> - ..                             | 17 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 - 16 <sup>3</sup> / <sub>4</sub>                             | 16 <sup>1</sup> / <sub>4</sub> - 16 <sup>3</sup> / <sub>4</sub> |
| "     | 28.... | 18 - ..   | 17 <sup>1</sup> / <sub>4</sub> - 17 <sup>1</sup> / <sub>2</sub> | 17 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 <sup>3</sup> / <sub>4</sub> - 17                             | 16 - 16 <sup>3</sup> / <sub>4</sub>                             |
| Mar.  | 6....  | 18 - ..   | .. - 17 <sup>3</sup> / <sub>4</sub>                             | 17 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 <sup>3</sup> / <sub>4</sub> - 17                             | 16 - 16 <sup>3</sup> / <sub>4</sub>                             |
| "     | 13.... | 18 - 18 <sup>1</sup> / <sub>2</sub>                             | 18 <sup>1</sup> / <sub>4</sub> - ..                             | 17 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 <sup>3</sup> / <sub>4</sub> - 17                             | 16 - 16 <sup>3</sup> / <sub>4</sub>                             |
| "     | 20.... | 18 <sup>1</sup> / <sub>2</sub> - ..                             | 18 <sup>1</sup> / <sub>2</sub> - 18 <sup>3</sup> / <sub>4</sub> | 17 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 <sup>3</sup> / <sub>4</sub> - 17                             | 18 - ..   |
| "     | 27.... | 19 - ..   | 18 <sup>1</sup> / <sub>2</sub> - 18 <sup>1</sup> / <sub>4</sub> | 18 - ..   | 15 - 15 <sup>1</sup> / <sub>2</sub>                             | 15 <sup>1</sup> / <sub>2</sub> - 15 <sup>1</sup> / <sub>2</sub> | 16 <sup>3</sup> / <sub>4</sub> - 17                             | 18 - ..   |

NOTE:—Canadian quotations are for large cheese, small cheese would be about ½c. a pound more.



SESSIONAL PAPER No. 15a

Wholesale Prices of Eggs Each Week from April 5, 1911, to March 27, 1912.

(From Boston Chamber of Commerce, "Producers' Price-Current," "Daily Trade Bulletin" and "The Canadian Farm.")

| Week. | 1911.  | BOSTON.               | NEW YORK.                          | CHICAGO.                           | HALIFAX.             | MONTREAL.            | TORONTO.            | WINNIPEG.            |
|-------|--------|-----------------------|------------------------------------|------------------------------------|----------------------|----------------------|---------------------|----------------------|
|       |        | "Western Firsts."     | "Firsts" Fresh Gathered.           | "Firsts."                          | "Straight Gathered." | "Straight Gathered." | "Straight Gathered" | "Straight Gathered." |
|       |        | Cts.                  | Cts.                               | Cts.                               | Cts.                 | Cts.                 | Cts.                | Cts.                 |
| April | 5....  | .....                 | 16 $\frac{1}{2}$ - ..              | 14 - ..                            | 17-19                | 17 -18               | 17-18               | 16-18                |
| "     | 12.... | .. -18                | 16 $\frac{3}{4}$ -17               | 15 - ..                            | 17-19                | 17 -18               | 17-18               | 16-18                |
| "     | 19.... | .....                 | 16 $\frac{3}{4}$ -17               | 14 $\frac{1}{2}$ - ..              | 17-19                | 16 -17               | 15-16               | 16-17                |
| "     | 26.... | .. -18 $\frac{1}{2}$  | 17 $\frac{1}{2}$ -18               | 15 $\frac{1}{2}$ - ..              | 17-19                | 16 -17               | 15-16               | 15-16                |
| May   | 3....  | 18 -18 $\frac{1}{2}$  | 17 -17 $\frac{1}{2}$               | 15 $\frac{1}{2}$ - ..              | 17-19                | 16 -17               | 15-16               | 15-16                |
| "     | 10.... | 17 $\frac{1}{2}$ -18  | 17 $\frac{1}{2}$ -18               | 15 $\frac{1}{2}$ - ..              | 17-19                | 16 -17               | 16-17               | 15-16                |
| "     | 17.... | .....                 | 16 $\frac{1}{2}$ -17               | 15 $\frac{1}{2}$ - ..              | 19-20                | 16 -17               | 16-17               | 15-16                |
| "     | 24.... | 17 - ..               | 16 -16 $\frac{1}{2}$               | 14 $\frac{1}{2}$ - ..              | 19-20                | 16 -17               | 16-17               | 15-16                |
| "     | 31.... | 15 -16                | 16 - ..                            | 14 - ..                            | 19-20                | 16 -17               | 16-17               | 15-16                |
| June  | 7....  | 15 - ..               | 14 $\frac{1}{2}$ -15               | 13 - ..                            | 16-17                | 17 $\frac{1}{2}$ -18 | 16-18               | 15-16                |
| "     | 14.... | 15 -16                | 14 $\frac{1}{2}$ -15               | 13 - ..                            | 16-17                | 17 $\frac{1}{2}$ -18 | 16-18               | 15-16                |
| "     | 21.... | .....                 | 14 $\frac{1}{2}$ -15               | 13 - ..                            | 16-17                | 17 $\frac{1}{2}$ -18 | 16-17               | 15-16                |
| "     | 28.... | 16 -16 $\frac{1}{2}$  | 15 -16                             | 13 - ..                            | 16-17                | 17 $\frac{1}{2}$ -18 | 16-17               | 15-16                |
| July  | 5....  | 17 -18                | 15 -16                             | 14 $\frac{1}{2}$ - ..              | 16-17                | 17 $\frac{1}{2}$ -18 | 16-17               | 15-16                |
| "     | 12.... | 17 -18                | 15 -16                             | 14 $\frac{1}{2}$ - ..              | 16-17                | 17 $\frac{1}{2}$ -18 | 16-17               | 15-16                |
| "     | 19.... | 17 -18                | 17 -18                             | 14 $\frac{1}{2}$ - ..              | 17-18                | 17 $\frac{1}{2}$ -18 | 18-19               | 15-16                |
| "     | 26.... | 19 - ..               | 18 -19                             | 15 - ..                            | 17-18                | 17 $\frac{1}{2}$ -18 | 18-19               | 15-16                |
| Aug.  | 2....  | 18 -19                | 17 -18                             | 15 $\frac{1}{2}$ - ..              | 15-17                | 16 -17               | 16-17               | .....                |
| "     | 9....  | 18 -19                | 17 -18                             | 16 - ..                            | 15-17                | 16 -17               | 16-18               | .....                |
| "     | 16.... | 17 -18                | 17 $\frac{1}{2}$ -18 $\frac{1}{2}$ | 15 - ..                            | 15-17                | 16 -17 $\frac{1}{2}$ | 16-18               | .....                |
| "     | 23.... | 17 -18                | 16 $\frac{1}{2}$ -17 $\frac{1}{2}$ | 15 $\frac{1}{2}$ - ..              | 16-18                | 16 -17 $\frac{1}{2}$ | 16-18               | .....                |
| "     | 30.... | 17 -18                | 17 -18                             | 16 - ..                            | 16-18                | 17 -18               | 16-18               | .....                |
| Sept. | 6....  | 18 -19                | 19 -20                             | 17 - ..                            | 16-18                | 17 -18               | 19-20               | 15-16                |
| "     | 13.... | 20 - ..               | 21 -22                             | 18 - ..                            | 16-18                | 17 -18               | 19-20               | 16-17                |
| "     | 20.... | 21 - ..               | 21 -22                             | 19 - ..                            | 16-18                | 17 -18               | 20-21               | 16-17                |
| "     | 27.... | 21 -22                | 20 -22                             | 19 - ..                            | 16-18                | 18 -19               | 20-21               | 17-18                |
| Oct.  | 4....  | 22 -23                | 21 -23                             | 19 - ..                            | 16-18                | 19 -20 $\frac{1}{2}$ | 21-22               | 17-18                |
| "     | 11.... | 23 -24                | 23 -25                             | 20 - ..                            | 23 - ..              | 19 -20 $\frac{1}{2}$ | 21-22               | 17-18                |
| "     | 18.... | 23 -25                | 23 -25                             | 21 - ..                            | 23 - ..              | 19 -20 $\frac{1}{2}$ | 21-22               | 17-18                |
| "     | 25.... | 23 -25                | 23 -25                             | 21 - ..                            | 23 - ..              | 19 -21               | 22-23               | 17-18                |
| Nov.  | 1....  | 24 -26                | 27 -29                             | 23 - ..                            | 23 - ..              | 21 -22 $\frac{1}{4}$ | 22-23               | 17-19                |
| "     | 8....  | 26 -28                | 30 -32                             | 25 -27                             | 23 - ..              | 22 -23               | 22-23               | 20-24                |
| "     | 15.... | 26 -28                | 31 -33                             | 26 -28                             | 23 - ..              | 23 -25               | 22-23               | 20-24                |
| "     | 22.... | 28 -30                | 33 -35                             | 27 -29                             | 23 - ..              | 23 -24               | 22-23               | 20-24                |
| "     | 29.... | 28 -30                | 33 -36                             | 28 -30                             | .. -30               | 23 -24               | 22-23               | 22-24                |
| Dec.  | 6....  | 32 -34                | 36 -39                             | 28 -30                             | 25-26                | 23 -24               | 24-25               | 22-25                |
| "     | 13.... | 32 -34                | 31 -33                             | 28 -30                             | 25-26                | 24 -25               | 24-25               | 22-25                |
| "     | 20.... | 32 -34                | 39 -40                             | 28 -31                             | 25-26                | 24 -25               | 25-26               | 27-28                |
| "     | 27.... | 30 -31                | 31 -32                             | 26 -27                             | 25-26                | 24 -25               | 25-26               | 27-28                |
| 1912. |        |                       |                                    |                                    |                      |                      |                     |                      |
| Jan.  | 3....  | 30 - ..               | 30 $\frac{1}{2}$ -31               | 29 -30                             | 25-26                | 24 -25               | 26-27               | 27-28                |
| "     | 10.... | 31 - ..               | .. -34                             | 33 - ..                            | 25-26                | 24 -25               | 26-27               | 28-30                |
| "     | 17.... | .. -32                | 32 $\frac{1}{2}$ -33               | 31 -31 $\frac{1}{2}$               | 25-26                | 25 -26               | 26-27               | 26-27                |
| "     | 24.... | .. -32                | 33 -34                             | 32 - ..                            | 25-26                | 26 -27               | 26-27               | 26-27                |
| "     | 31.... | 37 -38                | 38 -39                             | 36 - ..                            | 25-26                | 26 -27               | 26-27               | 29-30                |
| Feb.  | 7....  | 37 -38                | 38 -39                             | 32 - ..                            | 25-26                | 26 -27               | 30-35               | 29-30                |
| "     | 14.... | 37 - ..               | .. -38                             | 31 - ..                            | 25-26                | 27 -28               | 30-35               | 29-30                |
| "     | 21.... | .. -35                | .. -36                             | 33 - ..                            | 25-26                | 27 -28               | 30-35               | 29-30                |
| "     | 28.... | 32 - ..               | .. -30 $\frac{1}{2}$               | 28 - ..                            | 25-26                | 27 -28               | 30-35               | 29-30                |
| March | 6....  | .. -24                | 28 - ..                            | 19 $\frac{1}{4}$ -19 $\frac{1}{2}$ | 25-26                | 27 -28               | .....               | 29-30                |
| "     | 13.... | 21 $\frac{1}{2}$ - .. | .. -21                             | 19 $\frac{3}{4}$ - ..              | 25-26                | .....                | .....               | 29-30                |
| "     | 20.... | 21 -22 $\frac{1}{2}$  | 21 -21 $\frac{1}{2}$               | 20 - ..                            | 25-26                | .....                | .....               | .....                |
| "     | 27.... | 22 $\frac{1}{2}$ -23  | 22 $\frac{3}{4}$ -23 $\frac{1}{2}$ | 20 $\frac{1}{2}$ -20 $\frac{3}{4}$ | 25-26                | .....                | .....               | .....                |



3 GEORGE V., A. 1913

Wholesale Prices of Dressed Poultry each week from April 5, 1911, to March 27, 1912.

(From Boston Chamber of Commerce, "Producers' Price Current," "Daily Trade Bulletin" and "Canadian Farm.")

|       |        | BOSTON.                             | NEW YORK.                                   | CHICAGO.                                  | HALIFAX.    | MONTREAL.   | TORONTO.    | WINNIPEG.   |
|-------|--------|-------------------------------------|---|---|-------------|-------------|-------------|-------------|
| Week. |        | Dry Packed.<br>"Common<br>to Good." | Fowl,<br>"Western<br>Scalded"<br>(Average). | Fowl,<br>Scalded.<br>"Good to<br>Choice." | "Old Fowl." | "Old Fowl." | "Old Fowl." | "Old Fowl." |
| 1911. |        | Cts.                                | Cts.  | Cts.                                      | Cts.        | Cts.        | Cts.        | Cts.        |
| April | 5 ...  | 14 -16                              | 16½ - ..                                    | 13 -14                                    | 9 -10       | 9 -12       | 14 -16      | 16 -17      |
| "     | 12 ... | 15 -16                              | 16½ - ..                                    | 13 -14                                    | 9 -10       | 9 -12       | 14 -16      | 16 -17      |
| "     | 19 ... | 15 -16                              | 15½ - ..                                    | 13 -14                                    | 9 -10       | 9 -12       | 14 -16      | 16 -17      |
| "     | 26 ... | 15 -16                              | 14 - ..                                     | 13 -14                                    | 9 -10       | 9 -12       | 10 -11      | 15 -15½     |
| May   | 3 ...  | 15 - ..                             | 14 - ..                                     | 13 -14                                    | 9 -13       | 9 -12       | 10 -11      | 15 -15½     |
| "     | 10 ... | 15 - ..                             | 14 -14½                                     | 13 -14                                    | 9 -13       | 9 -12       | 10 -11      | 15 -15½     |
| "     | 17 ... | 15 - ..                             | .. -14                                      | 13 -14                                    | 12 -15      | 12 -14      | 14 -16      | 15 -15½     |
| "     | 24 ... | 15 - ..                             | .. -14                                      | 12 -13                                    | 12 -15      | 12 -14      | 14 -16      | 15 -15½     |
| "     | 31 ... | 15 - ..                             | 12½ -13                                     | 12 -13                                    | 12 -15      | 12 -14      | 14 -16      | 15 -15½     |
| June  | 7 ...  | 15 - ..                             | 12½ -13                                     | 12 -13                                    | 12 -15      | 12 -14      | 14 -16      | 15 -15½     |
| "     | 14 ... | 15 - ..                             | 13 -13½                                     | 12 -13                                    | 12 -15      | 12 -14      | 14 -16      | 8 -10       |
| "     | 21 ... | 15 - ..                             | 13½ - ..                                    | 12 -13                                    | 12 -15      | 12 -14      | 14 -16      | 8 -10       |
| "     | 28 ... | 15 - ..                             | 14 -14½                                     | 11 -11½                                   | 12 -15      | 12 -14      | 11 -12      | 8 -10       |
| July  | 5 ...  | 15 - ..                             | 14 -14½                                     | 11 -11½                                   | 12 -15      | 12 -14      | 14 -15      | 8 -10       |
| "     | 12 ... | 15 - ..                             | 14 -14½                                     | .. -12½                                   | 12 -15      | 12 -14      | 14 -15      | 11 -12      |
| "     | 19 ... | 15 - ..                             | 14½ -15                                     | .. -13                                    | 12 -15      | 12 -14      | 14 -15      | 11 -12      |
| "     | 26 ... | 15 - ..                             | 14 -14½                                     | 12 -12½                                   | 12 -15      | 12 -14      | 14 -15      | 10 -11      |
| Aug.  | 2 ...  | 14 -15                              | 13 -13½                                     | .. -12½                                   | 12 -15      | 12 -14      | 13 -15      | 10 -11      |
| "     | 9 ...  | 14 -15                              | .. -14                                      | 11½ -12                                   | 12 -15      | 12 -14      | 13 -15      | 10 -12      |
| "     | 16 ... | 14 -15                              | .. -14                                      | 13 - ..                                   | 12 -15      | 12 -14      | 13 -15      | 10 -12      |
| "     | 23 ... | 15 -16                              | .. -16                                      | 13 -13½                                   | 12 -15      | 12 -14      | 10 -12      | 10 -12      |
| "     | 30 ... | 15 -16                              | 14 -14½                                     | 13 - ..                                   | 12 -15      | 12 -14      | 10 -12      | 10 -12      |
| Sept. | 6 ...  | 14 -15                              | .. -15½                                     | .. -12½                                   | 12 -15      | 12 -14      | 10 -12      | 10 -12      |
| "     | 13 ... | 14 -15                              | .. -15                                      | 12½ -13                                   | 12 -15      | 12 -14      | 10 -12      | 10 -12      |
| "     | 20 ... | 14 -15                              | 14 - ..                                     | 12½ - ..                                  | 12 -15      | 12 -14      | 10 -12      | 10 -12      |
| "     | 27 ... | 14 -15                              | 13½ -14                                     | 11½ -12                                   | 12 -15      | 12 -14      | 10 -12      | 10 -11      |
| Oct.  | 4 ...  | 14 -15                              | 13½ -14                                     | 11 -11½                                   | 12 -15      | 12 -14      | 10 -12      | 10 -11      |
| "     | 11 ... | 14 -15                              | 14 -14½                                     | 11½ -12                                   | 12 -15      | 11 -13      | 8 -10       | 11 -12½     |
| "     | 18 ... | 13 -14                              | 12½ -13                                     | 9 - 9½                                    | 12 -15      | 11 -13      | 8 - 9½      | 11 -12½     |
| "     | 25 ... | 12 -13                              | 11 -12½                                     | 9½ -10                                    | 12 -15      | 11 -13      | 8 - 9½      | 9½ - ..     |
| Nov.  | 1 ...  | 12 -13                              | 12 -12½                                     | 9½ -10                                    | 12 -15      | 9 -10       | 7 - 8       | 9½ - ..     |
| "     | 8 ...  | 12 -13                              | 12½ -13                                     | 9 - ..                                    | 9 -12       | 9 -10       | 7 - 8       | 9½ - ..     |
| "     | 15 ... | 12 -13                              | .. -12                                      | 9 - 9½                                    | 9 -12       | 9 -10       | 7 - 8       | 9 - ..      |
| "     | 22 ... | 12 -13                              | .. -11                                      | 8½ - 9                                    | 9 -12       | 7 -10       | 7 - 8       | 9 - ..      |
| "     | 29 ... | 12 -13                              | .. -11                                      | 8½ - 9                                    | 9 -12       | 7 -10       | 7 - 8       | 9 - ..      |
| Dec.  | 6 ...  | 12 -13                              | 10 -11                                      | 8½ - 9                                    | 9 -12       | 7 -10       | 6 - 7       | 9 - ..      |
| "     | 13 ... | 11 -12                              | 10 -11                                      | 10 - ..                                   | 9 -12       | 9 -10       | 5 - 6       | 9 - ..      |
| "     | 20 ... | 11 -12                              | 11 -11½                                     | 10 - ..                                   | 9 -12       | 9 -10       | 5 - 6       | 9 - ..      |
| "     | 27 ... | 11 -12                              | 12 -12½                                     | 10 - ..                                   | 9 -12       | 9 -10       | 5 - 6       | 9 - ..      |
| 1912. |        |                                     |   |   |             |             |             |             |
| Jan   | 3 ...  | 11 -12                              | 12 -12½                                     | 11 -12                                    | 9 -12       | 9 -10       | 7 - 8       | 9 - ..      |
| "     | 10 ... | 12 -13                              | 15 -15½                                     | 13 -14                                    | 8 -12       | 8 - 9       | 7 - 8       | 9 - ..      |
| "     | 17 ... | 13 -16                              | .. -15½                                     | 13 - ..                                   | 8 -12       | 8 - 9       | 8 -12       | 9 - ..      |
| "     | 24 ... | 13 -16                              | .. -15                                      | 12 - ..                                   | 8 -12       | 10 -11      | 10 -12      | 9 - ..      |
| "     | 31 ... | 13 -16                              | .. -15                                      | 12½ -13                                   | 8 -12       | 10 -11      | 10 -12      | 9 - ..      |
| Feb.  | 7 ...  | 13 -16                              | .. -15                                      | 13½ -14                                   | 8 -12       | 10 -11      | 10 -12      | 12½ - ..    |
| "     | 14 ... | 13 -16                              | .. -15                                      | 13½ -14                                   | 8 -12       | 8 -10       | 7 - 9       | 12½ - ..    |
| "     | 21 ... | 13 -16                              | .. -15                                      | .. -13                                    | 8 -12       | 8 -10       | 7 - 9       | 12½ - ..    |
| "     | 28 ... | 13 -16                              | .. -15                                      | .. -14                                    | 8 -12       | 8 -10       | 7 -16       | 12½ - ..    |
| Mar   | 6 ...  | 14 -16                              | .. -15½                                     | 14 -15                                    | 8 -12       | 8 -10       | 7 -16       | 12½ - ..    |
| "     | 13 ... | 14 -16                              | .. -16                                      | 14½ -15                                   | 8 -12       | 8 -10       | 8 -10       | 12½ - ..    |
| "     | 20 ... | 14 -16                              | .. -16                                      | 14½ -15                                   | 8 -12       | 8 -10       | 8 -10       | 12½ - ..    |
| "     | 27 ... | 14 -16                              | .. -16                                      | 14 -15                                    | 8 -12       | 8 -10       | 8 -10       | 12½ - ..    |



## SESSIONAL PAPER No. 15a

Wholesale Prices of Breakfast Bacon each week from April 5, 1911, to March 27, 1912.

(From "Canadian Farm", "Journal of Commerce", "National Provisioner" and the London "Grocer".)

| Date.   | TORONTO.         | MONTREAL.        | CHICAGO.         | NEW YORK.        | LONDON, ENGLAND.                 |
|---------|------------------|------------------|------------------|------------------|----------------------------------|
|         | Breakfast Bacon. | Breakfast Bacon. | Breakfast Bacon. | Breakfast Bacon. | Canadian Bacon Leanest (Landed). |
| 1911.   | Cts.             | Cts.             | Cts.             | Cts.             | Cts.                             |
| April 5 | 15½-17½          | 14½-15           | 17½-19           | 15-16            | 12·3-13·0                        |
| " 12    | 15½-17½          | 14½-15           | 16-19            | 15-16            | 12·3-13·0                        |
| " 19    | 15½-17½          | 14½-15           | 16-19            | 16-17            | 12·3-13·0                        |
| " 26    | 15½-17½          | 13½-14½          | 16-19            | 16-17            | 12·1-13·0                        |
| May 3   | 15½-17½          | 13½-14½          | 16-19            | 15½-16½          | 10·8-12·1                        |
| " 10    | 15½-17½          | 13½-14½          | 16-19            | 15½-16½          | 10·8-12·1                        |
| " 17    | 15½-17½          | 13-14            | 16-19            | 15½-16½          | 11·0-12·1                        |
| " 24    | 15½-17½          | 13-14            | 16-19            | 15½-16½          | 11·9-12·6                        |
| " 31    | 15½-17½          | 13-14            | 16-19            | ..-16½           | 12·3-13·0                        |
| June 7  | 15½-17           | 13-14            | 16-19            | ..-16½           | 13·4-13·9                        |
| " 14    | 15½-17½          | 15-16            | 16-19            | ..-16½           | 14·1-14·5                        |
| " 21    | 15½-17½          | 15-16            | 16-19            | ..-17            | 13·9-14·5                        |
| " 28    | 16-18            | 16-17            | 16-19            | ..-17            | 13·2-14·1                        |
| July 5  | 16-18            | 16-17            | 17-18            | ..-17            | 13·9-14·1                        |
| " 12    | 16-18            | 16-17            | 17-18            | ..-17            | 13·9-14·1                        |
| " 19    | 16-18            | 17-18            | 17-18            | ..-17½           | 13·9-14·1                        |
| " 26    | 16-18            | 17-18            | 17-18            | ..-17½           | 13·0-13·6                        |
| Aug. 2  | 16-18            | 17-18            | 16½-17½          | ..-17½           | 12·8-13·6                        |
| " 9     | 16-18            | 17-18            | 16½-17½          | ..-17½           | .....                            |
| " 16    | 16-18            | 17-18            | 16½-17½          | ..-18            | .....                            |
| " 23    | 16-18            | 17-18            | 17-18            | ..-18            | 15·0-15·4                        |
| " 30    | 16-18            | 17-18            | 17-18            | ..-18            | 13·9-14·5                        |
| Sept. 6 | 17-18            | 17-18            | 17-17½           | ..-18            | 13·6-14·5                        |
| " 13    | 17-18            | 17-18            | 17-17½           | ..-17½           | 13·4-14·5                        |
| " 20    | 16-17            | 17-18            | 16½-17           | ..-17            | 13·2-14·1                        |
| " 27    | 16-17            | 17-18            | 16½-17           | ..-17            | 13·2-14·1                        |
| Oct. 4  | 16-17            | 17-18            | 16½-17           | ..-17            | 12·6-13·2                        |
| " 11    | 16-17            | 17-18            | 16½-17           | ..-16            | 12·1-12·8                        |
| " 18    | 16-17            | 14-14½           | 15½-16½          | ..-16            | 11·5-12·1                        |
| " 25    | 16-17            | 14-14½           | 15½-16½          | ..-16            | 11·3-11·7                        |
| Nov. 1  | 16-17            | 14-14½           | 16-17            | ..-14½           | 11·7-12·3                        |
| " 8     | 16-17            | 14-14½           | 15-16            | ..-14½           | 12·3-13·0                        |
| " 15    | 15-16            | 14-14½           | 15-16            | ..-14½           | 11·9-12·6                        |
| " 22    | 15-16            | 14-14½           | 15-16            | ..-14½           | 10·8-11·5                        |
| " 29    | 15-16            | 14-14½           | 15-16            | ..-14½           | 10·8-11·5                        |
| Dec. 6  | 15-16            | 14-14½           | 15-15½           | ..-14½           | 11·3-11·9                        |
| " 13    | 15-16            | 14-14½           | 15-15½           | ..-13½           | 10·8-11·9                        |
| " 20    | 15-16            | 14-14½           | 15-15½           | ..-13½           | 10·4-11·3                        |
| " 27    | 15-16            | 14-14½           | 14½-15           | ..-13            | 10·6-11·3                        |
| 1912.   |                  |                  |                  |                  |                                  |
| Jan. 3  | 15-16            | 14-14½           | 14½-15           | ..-13            | 11·3-11·9                        |
| " 10    | 15-16            | 14-14½           | 13½-14           | ..-13            | 11·5-11·9                        |
| " 17    | 15-16            | 14-14½           | 13½-14           | ..-13            | 11·5-11·9                        |
| " 24    | 15-16            | 14½-15           | 14-14½           | ..-13            | 11·3-11·9                        |
| " 31    | 15-16            | 14½-15           | 14-14½           | ..-13            | 11·3-11·9                        |
| Feb. 7  | 15-16            | 14½-15           | 14-14½           | ..-13            | 11·7-12·3                        |
| " 14    | 16-17            | 14½-15           | 14-14½           | ..-13            | 12·6-13·0                        |
| " 21    | 16-17            | 14½-15           | 13½-14½          | ..-13            | 12·6-13·0                        |
| " 28    | 16-17            | 14½-15           | 13½-14½          | ..-13            | 12·6-13·0                        |
| Mar. 6  | 16-17            | 14½-15           | 13½-14½          | ..-13            | 12·3-13·0                        |
| " 13    | 16-17            | 14½-             | 13½-14½          | ..-13            | 12·3-13·0                        |
| " 20    | 15-17            | 16-18            | 13½-14½          | 13-13½           | 12·3-13·0                        |
| " 27    | 15-17½           | 17-18            | 14-15            | 13½-14           | 12·6-13·0                        |



Market Quotations for Dressed Beef (No. 1 Carcass) Each Week from April 5, 1911, to March 27, 1912.

(From "Canadian Farm" and "National Provisioner.")

| —     |         | TORONTO. |         | MONTREAL. |         | CHICAGO. |         | NEW YORK. |         | WINNIPEG. |         |
|-------|---------|----------|---------|-----------|---------|----------|---------|-----------|---------|-----------|---------|
| 1911. |         | \$ cts.  | \$ cts. | \$ cts.   | \$ cts. | \$ cts.  | \$ cts. | \$ cts.   | \$ cts. | \$ cts.   | \$ cts. |
| April | 5.....  | 9 00-    | 9 00    | 8 75-     | 9 00    | 10 50-   | 11 50   | 9 50-     | 10 00   | 9 00-     | 10 00   |
| "     | 12..... | 9 00-    | 9 00    | 8 75-     | 9 00    | 10 50-   | 11 00   | 9 50-     | 10 00   | 9 00-     | 10 00   |
| "     | 19..... | 9 00-    | 9 00    | 8 75-     | 9 00    | 10 50-   | 11 00   | 9 50-     | 10 25   | 9 00-     | 10 00   |
| "     | 26..... | 9 00-    | 10 00   | 9 00-     | 10 00   | 10 50-   | 11 00   | 9 50-     | 10 00   | 10 00-    | 10 50   |
| May   | 3.....  | 9 00-    | 10 00   | 9 00-     | 10 00   | 10 50-   | 11 00   | 9 50-     | 10 00   | 10 00-    | 10 50   |
| "     | 10..... | 9 00-    | 10 00   | 9 00-     | 10 00   | 10 50-   | 11 00   | 9 50-     | 10 00   | 10 00-    | 10 50   |
| "     | 17..... | 9 00-    | 10 00   | 9 00-     | 10 00   | 10 25-   | 11 00   | 9 50-     | 10 00   | 10 00-    | 10 50   |
| "     | 24..... | 9 00-    | 10 00   | 9 00-     | 10 00   | 10 25-   | 11 00   | 9 25-     | 10 00   | 10 00-    | 10 50   |
| "     | 31..... | 9 00-    | 10 00   | 9 00-     | 10 00   | 10 25-   | 11 00   | 9 25-     | 9 50    | 10 00-    | 10 50   |
| June  | 7.....  | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 00-   | 11 00   | 9 25-     | 9 50    | 10 00-    | 10 50   |
| "     | 14..... | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 00-   | 11 00   | 9 25-     | 9 50    | 10 00-    | 10 50   |
| "     | 21..... | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 00-   | 11 00   | 9 25-     | 9 50    | 10 00-    | 10 50   |
| "     | 28..... | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 00-   | 11 00   | 9 25-     | 10 00   | 10 00-    | 10 50   |
| July  | 5.....  | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 00-   | 11 00   | 9 50-     | 10 00   | 10 00-    | 10 50   |
| "     | 12..... | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 00-   | 11 00   | 9 50-     | 10 00   | 10 00-    | 10 50   |
| "     | 19..... | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 00-   | 11 00   | 9 50-     | 10 25   | 10 00-    | 10 50   |
| "     | 26..... | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 50-   | 11 00   | 9 50-     | 10 50   | 10 00-    | 10 50   |
| Aug.  | 2.....  | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 50-   | 11 50   | 9 50-     | 10 50   | 10 00-    | 10 50   |
| "     | 9.....  | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 50-   | 11 50   | 10 50-    | 11 00   | 10 00-    | 10 50   |
| "     | 16..... | 9 00-    | 10 00   | 9 00-     | 10 50   | 10 75-   | 11 50   | 11 50-    | 12 00   | 10 00-    | 10 50   |
| "     | 23..... | 9 00-    | 10 00   | 9 00-     | 10 25   | 11 00-   | 12 00   | 11 50-    | 12 00   | 10 00-    | 10 40   |
| "     | 30..... | 9 00-    | 10 00   | 9 00-     | 10 25   | 11 00-   | 12 50   | 11 50-    | 12 00   | 10 00-    | 10 40   |
| Sept. | 6.....  | 9 00-    | 10 00   | 9 00-     | 10 25   | 11 00-   | 12 50   | 11 50-    | 12 00   | 10 00-    | 10 35   |
| "     | 13..... | 9 00-    | 10 25   | 9 00-     | 10 25   | 11 00-   | 12 00   | 11 50-    | 12 00   | 10 00-    | 10 35   |
| "     | 20..... | 9 00-    | 10 25   | 9 00-     | 10 25   | 11 50-   | 12 00   | 10 75-    | 11 50   | 10 00-    | 10 35   |
| "     | 27..... | 9 00-    | 10 25   | 9 00-     | 10 25   | 11 50-   | 12 00   | 10 75-    | 11 50   | 10 00-    | 10 25   |
| Oct.  | 4 ..    | 9 00-    | 10 25   | 9 00-     | 10 25   | 11 50-   | 12 00   | 10 75-    | 11 50   | 10 00-    | 10 25   |
| "     | 11..... | 9 00-    | 10 25   | 9 00-     | 10 50   | 11 50-   | 12 50   | 11 00-    | 12 00   | 10 00-    | 10 25   |
| "     | 18.. .  | 9 00-    | 10 25   | 9 00-     | 10 50   | 11 25-   | 12 25   | 11 25-    | 12 00   | 10 00-    | 10 25   |
| "     | 25..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 11 50-   | 12 50   | 11 50     | 12 50   | 10 00-    | 10 25   |
| Nov.  | 1 ..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 11 50-   | 12 50   | 11 50-    | 12 50   | 10 00-    | 10 25   |
| "     | 8.....  | 9 00-    | 9 75    | 9 00-     | 10 00   | 11 50-   | 12 50   | 11 50-    | 12 50   | 9 00-     | 9 50    |
| "     | 15..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 11 75-   | 12 75   | 11 50-    | 12 50   | 9 00-     | 9 50    |
| "     | 22..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 11 75-   | 12 75   | 11 50-    | 12 50   | 9 00-     | 9 50    |
| "     | 29..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 12 00-   | 13 00   | 11 50-    | 12 50   | 9 00-     | 9 50    |
| Dec.  | 6.....  | 9 00-    | 9 75    | 9 00-     | 10 00   | 12 00-   | 13 00   | 11 00-    | 12 50   | 9 00-     | 9 50    |
| "     | 13..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 12 00-   | 13 00   | 11 00-    | 12 50   | 9 00-     | 9 50    |
| "     | 20..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 12 00-   | 13 00   | 11 00-    | 12 50   | 9 00-     | 9 50    |
| "     | 27..... | 9 00     | 9 75    | 9 00-     | 10 00   | 12 00-   | 13 00   | 11 00-    | 12 50   | 9 00-     | 9 50    |
| 1912. |         |          |         |           |         |          |         |           |         |           |         |
| Jan.  | 3 ..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 12 00-   | 13 00   | 11 00-    | 12 50   | 9 00-     | 9 50    |
| "     | 10..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 11 50-   | 12 50   | 11 50-    | 12 50   | 9 00-     | 9 50    |
| "     | 17..... | 9 00-    | 9 75    | 9 00-     | 10 00   | 11 50-   | 12 50   | 11 50-    | 12 50   | 9 00-     | 9 50    |
| "     | 24..... | 9 00-    | 10 00   | 9 00-     | 10 00   | 11 50-   | 12 50   | 11 50-    | 12 50   | 9 00-     | 9 50    |
| "     | 31..... | 9 00-    | 10 00   | 9 00-     | 10 00   | 12 00-   | 12 50   | 11 00-    | 11 50   | 9 00-     | 9 50    |
| Feb.  | 7.....  | 9 00-    | 10 00   | 9 00-     | 10 00   | 12 00-   | 12 50   | .....     | - 12 50 | 9 00-     | 9 50    |
| "     | 14..... | 9 00-    | 10 00   | 9 00-     | 10 00   | 12 00-   | 12 50   | .....     | - 12 50 | 9 00-     | 9 50    |
| "     | 21..    | 10 00-   | 11 00   | 9 00-     | 10 00   | 12 00-   | 12 50   | .....     | - 12 00 | 9 00-     | 9 50    |
| "     | 28..... | 10 00-   | 11 00   | 9 00-     | 10 00   | 12 00-   | 12 50   | .....     | - 12 00 | 9 00-     | 9 50    |
| Mar.  | 6.....  | 10 50-   | 11 00   | 9 00-     | 10 00   | 11 50-   | 12 50   | .....     | - 12 00 | 9 00-     | 9 50    |
| "     | 13..... | 10 50-   | 11 00   | 9 00-     | 10 00   | 11 50-   | 12 50   | 11 50-    | 12 00   | 9 00-     | 9 50    |
| "     | 20..... | 10 50-   | 11 00   | 9 00-     | 10 00   | 11 50-   | 12 50   | 11 50-    | 12 50   | 9 00-     | 9 50    |
| "     | 27..... | 10 50-   | 11 00   | 9 00-     | 10 00   | 11 50-   | 12 50   | 11 50-    | 12 50   | 9 00-     | 9 50    |



## SESSIONAL PAPER No. 15a

Market Quotations for Live Hogs Each Week from April 5, 1911, to March 27, 1912.

(From "Weekly Globe," "Journal of Commerce," "Canadian Farm," "Buffalo Commercial" and "National Provisioner.")

| Date    | TORONTO.              |         | MONTREAL.              |         | WINNIPEG. |         | CHICAGO.         |         | BUFFALO.   |         | NEW YORK.        |         |
|---------|-----------------------|---------|------------------------|---------|-----------|---------|------------------|---------|------------|---------|------------------|---------|
|         | "Choice" per 100 lbs. |         | "Selects" per 100 lbs. |         | "Choice." |         | "Bulk of Sales." |         | "Yorkers." |         | "Medium Weight." |         |
| 1911.   | \$ cts.               | \$ cts. | \$ cts.                | \$ cts. | \$ cts.   | \$ cts. | \$ cts.          | \$ cts. | \$ cts.    | \$ cts. | \$ cts.          | \$ cts. |
| Apr. 5  | 6 70-                 |         | 7 40-                  | 7 50    | 7 25-     | 7 50    | 6 65-            | 6 85    | 7 25-      | 7 35    |                  |         |
| " 12    | 6 50-                 |         | 7 00-                  | 7 40    | 7 25-     | 7 50    | 6 35-            | 6 45    | 7 20-      | 7 35    |                  | -7 30   |
| " 19    | 6 50-                 |         |                        | -6 75   | 6 90-     | 7 00    | 6 20-            | 6 30    | 6 80-      | 6 85    |                  | -7 05   |
| " 26    | 6 50-                 |         |                        | -6 75   | 6 90-     | 7 25    | 6 05-            | 6 20    | 6 55-      | 6 65    |                  | -6 85   |
| May 3   | 6 30-                 |         | 6 50-                  | 6 75    | 6 50-     | 6 75    | 5 90-            | 6 00    | 6 60-      | 6 70    |                  | -6 60   |
| " 10    | 6 05-                 |         | 6 65-                  | 6 85    | 6 50-     | 6 75    | 6 15-            | 6 25    | 6 35-      | 6 40    |                  | -6 65   |
| " 17    | 6 05-                 |         | 6 75-                  | 7 00    | 6 50-     | 7 00    | 6 20-            | 6 25    | 6 50-      | 6 55    |                  | -6 60   |
| " 24    | 6 20-                 |         | 6 75-                  | 6 85    | 6 50-     | 6 75    | 5 75-            | 5 90    | 6 50-      | 6 55    | 6 55-            | 6 60    |
| " 31    | 6 40-                 |         | 6 85-                  | 7 00    | 6 50-     | 7 00    | 5 85-            | 6 00    | 6 50-      | 6 55    | 6 65-            | 6 70    |
| June 7  | 6 70-                 |         |                        | -6 85   | 7 00-     | 7 35    | 6 00-            | 6 10    | 6 35-      | 6 40    | 6 75-            | 6 80    |
| " 14    | 7 10-                 |         | 7 25-                  | 7 50    | 6 90-     | 7 00    | 6 00-            | 6 15    | 6 55-      | 6 60    | 6 65-            | 6 70    |
| " 21    | 7 40-                 |         | 7 00-                  | 7 75    | 6 90-     | 7 00    | 6 35-            | 6 45    | 6 80-      | 6 85    |                  | -7 20   |
| " 28    | 7 20-                 |         | 7 50-                  | 7 75    | 6 90-     | 7 25    | 6 15-            | 6 30    | 6 75-      | 6 80    |                  | -7 20   |
| July 5  | 7 10-                 |         | 7 25-                  | 7 50    | 6 90-     | 7 25    | 6 55-            | 6 75    | 7 20-      | 7 25    |                  | -7 45   |
| " 12    | 7 10-                 |         |                        | -7 50   | 6 90-     | 7 25    | 6 40-            | 6 65    | 7 15-      | 7 20    |                  | -7 50   |
| " 19    | 7 45-                 | 7 60    | 7 75-                  | 8 00    | 6 90-     | 7 25    | 6 55-            | 6 80    |            |         |                  | -7 65   |
| " 26    | 7 70-                 | 7 85    |                        | -7 70   | 6 90-     | 7 25    | 6 65-            | 6 90    | 7 40-      | 7 50    |                  | -7 90   |
| Aug. 2  | 7 65-                 | 7 75    | 7 50-                  | 7 75    | 6 90-     | 8 00    | 6 90-            | 7 30    | 7 95-      | 8 00    |                  | -8 00   |
| " 9     | 7 65-                 | 7 75    | 7 00-                  | 7 25    | 6 90-     | 7 50    | 7 30-            | 7 65    |            |         |                  | -8 00   |
| " 16    | 7 85-                 | 7 90    |                        | -7 50   | 7 25-     | 7 50    | 7 15-            | 7 60    | 8 15-      | 8 20    |                  | -8 45   |
| " 23    |                       | -8 10   | 7 85-                  | 8 00    | 8 10-     | 8 25    | 7 25-            | 7 60    | 8 25-      | 8 30    |                  | -8 55   |
| " 30    |                       | -8 10   | 7 75-                  | 7 85    | 8 10-     | 9 00    | 7 10-            | 7 45    | 8 00-      | 8 05    |                  | -8 55   |
| Sept. 6 | 7 70-                 | 7 80    | 7 75-                  | 7 85    | 8 10-     | 9 00    | 6 90-            | 7 20    |            |         |                  | -8 25   |
| " 13    | 7 40-                 | 7 50    | 7 50-                  | 7 75    | 8 10-     | 9 00    | 6 85-            | 7 25    | 7 50-      | 7 55    | 7 90-            | 8 15    |
| " 20    | 7 15-                 | 7 25    |                        | -7 25   | 8 10-     | 9 00    | 6 75-            | 7 05    | 7 50-      | 7 60    |                  | -7 75   |
| " 27    | 7 10-                 | 7 20    | 7 00-                  | 7 10    | 8 10-     | 8 50    | 6 30-            | 6 65    | 7 10-      | 7 15    |                  | -7 25   |
| Oct. 4  | 6 75-                 | 6 85    | 6 95-                  | 7 00    | 8 10-     | 8 50    | 6 20-            | 6 65    |            |         | 7 15-            | 7 20    |
| " 11    | 6 40-                 |         | 6 50-                  | 6 75    | 8 10-     | 8 50    | 6 20-            | 6 60    | 6 95-      | 7 00    | 7 05-            | 7 10    |
| " 18    | 6 15-                 |         | 6 25-                  | 6 50    | 7 50-     | 7 75    | 6 30-            | 6 65    | 6 95-      | 7 00    | 7 05-            | 7 10    |
| " 25    | 6 00-                 | 6 15    | 6 00-                  | 6 30    | 7 50-     | 7 75    | 6 10-            | 6 35    | 6 45-      | 6 50    | 6 80-            | 6 85    |
| Nov. 1  | 6 10-                 | 6 30    | 6 00-                  | 6 30    | 7 50-     | 7 75    | 5 95-            | 6 25    | 6 45-      | 6 50    |                  | -6 80   |
| " 8     | 6 35-                 | 6 50    | 6 40-                  | 6 60    | 7 00-     | 7 50    | 6 05-            | 6 30    | 6 25-      | 6 40    |                  | -6 65   |
| " 15    | 6 75-                 | 6 85    | 6 75-                  | 6 85    | 7 50-     | 8 00    | 6 30-            | 6 55    | 6 55-      | 6 60    | 6 75-            | 6 80    |
| " 22    | 6 75-                 | 6 85    | 6 65-                  | 6 75    | 7 50-     | 7 85    | 6 20-            | 6 45    | 6 30-      | 6 35    | 6 50-            | 6 55    |
| " 29    |                       | -6 35   | 6 25-                  | 6 50    | 7 50-     | 8 00    | 5 95-            | 6 25    | 6 35-      | 6 45    |                  | -6 80   |
| Dec. 6  | 6 50-                 |         | 6 50-                  | 6 65    | 7 50-     | 8 00    | 5 85-            | 6 10    | 6 25-      | 6 30    |                  | -6 70   |
| " 13    | 6 50-                 | 6 60    | 6 65-                  | 6 80    | 7 50-     | 8 50    | 5 85-            | 6 20    | 6 30-      | 6 40    | 6 75-            | 6 80    |
| " 20    | 6 50-                 |         | 6 90-                  | 7 00    | 7 00-     | 7 50    | 5 95-            | 6 15    | 6 20-      | 6 25    | 6 50-            | 6 55    |
| " 27    | 6 20-                 |         | 6 90-                  | 7 00    | 7 00-     | 7 50    | 6 15-            | 6 35    | 6 50-      | 6 55    |                  | -6 80   |
| 1912.   |                       |         |                        |         |           |         |                  |         |            |         |                  |         |
| Jan. 3  | 6 20-                 |         | 6 90-                  | 7 00    | 7 00-     | 7 50    | 5 95-            | 6 15    | 6 40-      | 6 45    |                  |         |
| " 10    | 6 40-                 | 6 50    | 7 00-                  | 7 10    | 7 00-     | 7 25    | 6 10-            | 6 30    |            | -6 80   |                  |         |
| " 17    | 6 60-                 |         | 7 00-                  | 7 10    | 7 00-     | 7 25    | 6 15-            | 6 35    | 6 40-      | 6 50    |                  | -6 75   |
| " 24    | 6 50-                 |         | 7 10-                  | 7 25    | 7 00-     | 7 25    | 6 05-            | 6 30    | 6 40-      | 6 60    |                  | -6 75   |
| " 31    | 6 50-                 |         | 7 10-                  | 7 25    | 7 00-     | 7 25    | 6 15-            | 6 30    | 6 40-      | 6 60    |                  | -6 50   |
| Feb. 7  | 6 60-                 | 6 65    |                        | -7 15   | 7 00-     | 7 50    | 6 10-            | 6 30    | 6 55-      | 6 60    |                  | -6 75   |
| " 14    | 6 70-                 | 6 75    | 7 25-                  | 7 35    | 7 00-     | 7 50    | 6 05-            | 6 20    | 6 55-      | 6 60    |                  | -6 75   |
| " 21    | 6 70-                 |         | 7 40-                  | 7 50    | 7 00-     | 7 50    | 6 15-            | 6 30    | 6 55-      | 6 60    |                  | -6 75   |
| " 28    | 6 75-                 | 6 85    | 7 60-                  | 7 75    | 7 25-     | 7 50    | 6 30-            | 6 45    | 6 85-      | 7 05    |                  | -7 25   |
| Mar. 6  | 6 90-                 | 7 00    |                        | -7 75   | 7 25-     | 7 50    | 6 45-            | 6 55    | 6 75-      | 6 90    |                  | -7 25   |
| " 13    | 7 00-                 | 7 10    | 7 75-                  | 7 85    | 7 25-     | 7 50    | 6 85-            | 7 00    | 7 20-      | 7 35    |                  | -7 70   |
| " 20    | 7 50-                 | 7 60    | 8 00-                  | 8 25    | 7 25-     | 7 50    | 7 05-            | 7 20    | 7 80-      | 7 90    | 7 40-            | 7 90    |
| " 27    | 7 75-                 | 7 90    | 8 60-                  | 8 75    | 7 25-     | 7 50    | 7 65-            | 7 80    | 8 00-      | 8 10    | 7 70-            | 8 00    |

NOTE.—Prices at Toronto, Chicago and Buffalo are for hogs "fed and watered"; those at Montreal and Winnipeg for hogs "weighed off cars". Therefore to make a fair comparison 25c. should be deducted from each Montreal and Winnipeg quotation.



3 GEORGE V., A. 1913

Market Quotations for Live Cattle Each Week from April 5, 1911, to March 27, 1912.  
(From "Canadian Farm.")

| Date        | TORONTO.                |         |                         |         | MONTREAL.               |         |                         |         | WINNIPEG.               |         |
|-------------|-------------------------|---------|-------------------------|---------|-------------------------|---------|-------------------------|---------|-------------------------|---------|
|             | Export Steers "Choice." |         | Butcher Steers "Prime." |         | Export Steers "Choice." |         | Butcher Steers "Prime." |         | Butcher Steers "Prime." |         |
|             | \$                      | cts.    | \$                      | cts.    | \$                      | cts.    | \$                      | cts.    | \$                      | cts.    |
| 1911.       |                         |         |                         |         |                         |         |                         |         |                         |         |
| April 5     | 5                       | 85-6 12 | 5                       | 80-6 25 | 6                       | 25-6 50 | 6                       | 25-6 50 | 5                       | 25-6 25 |
| " 12        | 5                       | 85-6 15 | 5                       | 80-6 25 | 6                       | 25-6 50 | 7                       | 00-8 00 | 5                       | 25-6 25 |
| " 19        | 5                       | 85-6 15 | 5                       | 80-6 10 | 6                       | 00-6 25 | 6                       | 00-6 25 | 5                       | 25-6 25 |
| " 26        | 5                       | 75-5 90 | 5                       | 75-5 90 | 6                       | 25-6 50 | 6                       | 25-6 50 | 5                       | 25-6 25 |
| May 3       | 5                       | 75-6 00 | 5                       | 75-6 00 | 6                       | 25-6 50 | 6                       | 25-6 50 | 5                       | 25-6 00 |
| " 10        | 5                       | 75-6 12 | 5                       | 75-6 00 | 6                       | 00-6 25 | 6                       | 25-6 50 | 5                       | 25-6 00 |
| " 17        | 5                       | 75-5 90 | 5                       | 50-5 85 | 6                       | 00-6 35 | 5                       | 75-6 00 | 5                       | 25-6 00 |
| " 24        | 5                       | 85-6 00 | 5                       | 75-6 00 | 6                       | 25-6 50 | 5                       | 75-6 00 | 6                       | 25-6 75 |
| " 31        | 5                       | 85-6 00 | 5                       | 75-6 00 | 6                       | 25-6 50 | 5                       | 75-5 90 | 6                       | 00-6 75 |
| June 7      | 6                       | 00-6 25 | 5                       | 75-6 10 | 6                       | 25-6 50 | 5                       | 75-6 00 | 6                       | 00-6 75 |
| " 14        | 6                       | 00-6 35 | 5                       | 75-6 30 | 6                       | 25-6 50 | 5                       | 75-6 00 | 6                       | 00-6 75 |
| " 21        | 6                       | 00-6 25 | 5                       | 75-6 15 | 6                       | 25-6 50 | 5                       | 75-6 00 | 6                       | 00-6 75 |
| " 28        | 6                       | 00-6 15 | 5                       | 75-6 25 | 6                       | 25-6 50 | 5                       | 75-6 00 | 6                       | 00-6 75 |
| July 5      | 5                       | 80-6 10 | 5                       | 75-6 10 | 6                       | 25-6 50 | 5                       | 75-6 00 | 6                       | 00-6 75 |
| " 12        | 5                       | 80-6 75 | 5                       | 75-6 10 | 6                       | 00-6 25 | 5                       | 75-6 00 | 6                       | 00-6 75 |
| " 19        | 5                       | 60-6 05 | 5                       | 60-5 95 | 5                       | 90-6 25 | 5                       | 75-6 00 | 5                       | 75-6 25 |
| " 26        | 5                       | 75-6 25 | 5                       | 60-6 00 | 5                       | 90-6 25 | 5                       | 75-6 00 | 5                       | 75-6 00 |
| August 2    | 5                       | 75-6 30 | 5                       | 60-6 00 | 5                       | 90-6 25 | 5                       | 75-6 00 | 4                       | 80-5 25 |
| " 9         | 5                       | 75-6 25 | 5                       | 90-6 30 | 5                       | 90-6 00 | 5                       | 75-5 90 | 4                       | 50-5 00 |
| " 16        | 5                       | 75-6 25 | 5                       | 20-6 30 | 5                       | 90-6 00 | 5                       | 75-5 90 | 4                       | 50-5 25 |
| " 23        | 5                       | 75-6 20 | 5                       | 20-6 20 | 5                       | 90-6 25 | 5                       | 75-6 00 | 4                       | 50-5 25 |
| " 30        | 5                       | 75-6 40 | 5                       | 20-6 15 | 5                       | 90-6 25 | 5                       | 75-6 00 | 4                       | 50-5 50 |
| September 6 | 5                       | 80-6 50 | 5                       | 90-6 10 | 5                       | 90-6 25 | 5                       | 75-6 00 | 4                       | 50-5 00 |
| " 13        | 5                       | 75-6 60 | 5                       | 90-6 20 | 5                       | 90-6 25 | 5                       | 75-6 25 | 4                       | 75-5 25 |
| " 20        | 5                       | 75-6 50 | 5                       | 90-6 10 | 5                       | 90-6 00 | 5                       | 75-6 00 | 4                       | 75-5 25 |
| " 27        | 6                       | 30-6 45 | 5                       | 80-6 10 | 5                       | 90-6 00 | 5                       | 75-6 00 | 4                       | 75-5 00 |
| October 4   | 6                       | 30-6 35 | 5                       | 80-6 10 | 6                       | 00-6 50 | 5                       | 75-6 00 | 4                       | 75-5 00 |
| " 11        | 6                       | 30-6 60 | 5                       | 80-6 30 | 6                       | 00-6 25 | 5                       | 75-5 85 | 4                       | 75-5 15 |
| " 18        | 5                       | 90-6 25 | 5                       | 80-6 10 | 6                       | 00-6 25 | 5                       | 75-6 00 | 4                       | 50-4 65 |
| " 25        | 5                       | 85-6 45 | 5                       | 80-6 00 | 5                       | 90-6 00 | 5                       | 75-6 00 | 4                       | 85-5 00 |
| November 1  | 6                       | 25-6 40 | 5                       | 65-5 80 | 5                       | 90-6 10 | 5                       | 50-5 60 | 4                       | 85-5 15 |
| " 8         | 6                       | 25-6 50 | 5                       | 50-6 00 | 5                       | 90-6 10 | 5                       | 80-5 90 | 4                       | 85-5 10 |
| " 15        | 6                       | 10-6 50 | 5                       | 80-6 00 | 5                       | 90-6 35 | 6                       | 00-6 25 | 4                       | 75-5 00 |
| " 22        | 6                       | 00-6 10 | 5                       | 75-5 85 | 5                       | 90-6 35 | 6                       | 00-6 25 | 4                       | 75-5 00 |
| " 29        | 6                       | 10-6 10 | 5                       | 80-6 00 | 5                       | 90-6 00 | 6                       | 00-6 10 | 4                       | 75-5 00 |
| December 6  | 6                       | 40-6 60 | 6                       | 00-6 10 | 5                       | 90-6 20 | 6                       | 00-6 10 | 4                       | 75-5 00 |
| " 13        | 6                       | 40-6 75 | 6                       | 00-6 40 | 5                       | 90-6 60 | 6                       | 25-6 40 | 4                       | 75-5 00 |
| " 20        | 6                       | 50-6 75 | 6                       | 60-6 75 | 5                       | 90-6 60 | 6                       | 25-6 40 | 5                       | 00-5 25 |
| " 27        | 6                       | 50-6 75 | 6                       | 75-6 90 | 5                       | 90-6 60 | 6                       | 25-6 40 | 5                       | 00-5 25 |
| 1912.       |                         |         |                         |         |                         |         |                         |         |                         |         |
| January 3   | 6                       | 50-6 75 | 6                       | 00-6 50 | 5                       | 90-6 60 | 6                       | 25-6 40 | 5                       | 00-5 25 |
| " 10        | 6                       | 50-6 90 |                         |         | 5                       | 90-6 60 |                         |         | 4                       | 50-5 15 |
| " 17        | 6                       | 75-7 25 |                         |         | 6                       | 90-7 25 |                         |         | 4                       | 50-5 15 |
| " 24        | 6                       | 60-7 00 |                         |         | 6                       | 90-7 00 |                         |         | 4                       | 50-5 50 |
| " 31        | 6                       | 50-6 75 | 6                       | 50-6 75 | 6                       | 90-7 00 |                         |         | 4                       | 50-5 50 |
| February 7  | 6                       | 50-7 00 | 6                       | 75-6 90 | 6                       | 90-7 00 |                         |         | 5                       | 00-6 00 |
| " 14        | 6                       | 15-6 90 | 6                       | 50-6 75 | 6                       | 90-7 00 |                         |         | 5                       | 00-6 00 |
| " 21        | 6                       | 80-7 25 | 6                       | 25-6 50 | 6                       | 90-7 00 |                         |         | 5                       | 00-6 00 |
| " 28        | 6                       | 80-6 90 | 6                       | 25-6 50 |                         |         | 7                       | 00-7 25 | 5                       | 50-6 00 |
| March 6     | 6                       | 90-7 12 | 6                       | 70-6 90 |                         |         |                         |         | 5                       | 50-6 25 |
| " 13        | 7                       | 00-7 25 | 6                       | 50-6 85 |                         |         |                         |         | 6                       | 25-6 50 |
| " 20        | 7                       | 00-7 05 | 6                       | 90-7 00 |                         |         | 7                       | 25-7 35 | 6                       | 25-6 50 |
| " 27        | 6                       | 75-7 20 | 7                       | 25-8 25 |                         |         | 7                       | 35-7 50 | 6                       | 00-6 25 |



SESSIONAL PAPER No. 15a

## Market Quotations for Live Cattle—Continued.

(From "The Breeder's Gazette," "Buffalo Commercial" and "National Provisioner.")

| Date.        | CHICAGO.                      |         |                               |         | BUFFALO.      |         |                  |         | NEW YORK.                        |         |
|--------------|-------------------------------|---------|-------------------------------|---------|---------------|---------|------------------|---------|----------------------------------|---------|
|              | Steers 1,250 to<br>1,450 lbs. |         | Steers 1,150 to<br>1,400 lbs. |         | Prime Steers. |         | Shipping Steers. |         | Good to Choice<br>Native Steers. |         |
| 1911.        | \$ cts.                       | \$ cts. | \$ cts.                       | \$ cts. | \$ cts.       | \$ cts. | \$ cts.          | \$ cts. | \$ cts.                          | \$ cts. |
| April 5..... | 6 60                          | 6 90    | 6 30                          | 6 60    | 6 40          | 6 80    |                  |         | 6 25                             | 6 80    |
| " 12.....    | 6 50                          | 6 80    | 6 20                          | 6 40    | 6 50          | 6 75    |                  |         | 6 10                             | 6 75    |
| " 19.....    | 6 40                          | 6 75    | 6 15                          | 6 35    |               |         |                  |         | 6 10                             | 6 75    |
| " 26.....    | 6 20                          | 6 45    | 5 90                          | 6 15    | 6 25          | 6 40    |                  |         | 5 90                             | 6 50    |
| May 3.....   | 6 20                          | 6 50    | 5 85                          | 6 10    |               |         |                  |         | 5 65                             | 6 20    |
| " 10.....    | 6 25                          | 6 50    | 6 00                          | 6 20    |               |         |                  |         | 6 00                             | 6 40    |
| " 17.....    | 6 25                          | 6 50    | 6 00                          | 6 20    | 6 15          | 6 25    |                  |         | 5 80                             | 6 50    |
| " 24.....    | 6 20                          | 6 40    | 5 90                          | 6 15    | 6 30          | 6 40    |                  |         | 5 80                             | 6 35    |
| " 31.....    | 6 20                          | 6 35    | 5 90                          | 6 15    | 6 25          | 6 40    |                  |         | 5 90                             | 6 50    |
| June 7.....  | 6 20                          | 6 35    | 5 75                          | 6 15    | 6 30          | 6 45    | 6 00             | 6 25    | 5 90                             | 6 50    |
| " 14.....    | 6 25                          | 6 45    | 5 90                          | 6 20    | 6 50          | 6 75    | 5 75             | 6 40    | 6 15                             | 6 70    |
| " 21.....    | 6 25                          | 6 50    | 5 90                          | 6 20    | 6 40          | 6 50    | 5 50             | 6 25    | 6 15                             | 6 70    |
| " 28.....    | 6 25                          | 6 65    | 5 90                          | 6 20    | 6 50          | 6 65    | 5 50             | 6 25    | 6 15                             | 6 70    |
| July 5.....  | 6 50                          | 6 85    | 6 15                          | 6 35    | 6 65          | 6 75    | 5 75             | 6 25    | 6 15                             | 6 65    |
| " 12.....    | 6 50                          | 7 00    | 6 15                          | 6 35    | 6 50          | 6 65    | 5 75             | 6 25    | 6 25                             | 6 80    |
| " 19.....    | 6 40                          | 6 85    | 6 00                          | 6 30    |               |         |                  |         | 6 25                             | 6 90    |
| " 26.....    | 6 75                          | 7 15    | 6 40                          | 6 65    | 6 75          | 6 90    | 6 15             | 6 40    | 6 25                             | 7 00    |
| Aug. 2.....  | 6 85                          | 7 15    | 6 40                          | 6 65    | 6 90          | 7 20    | 6 25             | 6 65    | 6 10                             | 7 25    |
| " 9.....     | 7 15                          | 7 50    | 6 60                          | 7 00    |               |         |                  |         | 6 00                             | 7 00    |
| " 16.....    | 7 40                          | 8 00    | 6 75                          | 7 25    | 7 15          | 7 25    | 6 75             | 7 00    | 6 35                             | 7 25    |
| " 23.....    | 7 75                          | 8 15    | 7 00                          | 7 65    | 7 15          | 7 25    | 6 75             | 7 00    | 6 40                             | 7 50    |
| " 30.....    | 7 75                          | 8 20    | 7 00                          | 7 65    | 7 10          | 7 25    | 6 25             | 6 75    | 6 45                             | 7 55    |
| Sept. 6..... | 7 75                          | 8 00    | 7 00                          | 7 65    |               |         |                  |         | 6 40                             | 7 50    |
| " 13.....    | 7 80                          | 8 15    | 7 00                          | 7 65    | 7 45          | 7 65    | 6 40             | 6 80    | 6 45                             | 7 50    |
| " 20.....    | 7 80                          | 8 15    | 7 00                          | 7 65    | 7 75          | 7 90    | 6 75             | 7 50    | 6 40                             | 7 75    |
| " 27.....    | 7 80                          | 8 15    | 7 00                          | 7 65    | 7 50          | 7 60    | 6 75             | 7 40    | 6 00                             | 7 25    |
| Oct. 4.....  | 7 80                          | 8 20    | 7 00                          | 7 65    |               |         |                  |         | 6 15                             | 7 25    |
| " 11.....    | 8 00                          | 8 40    | 7 25                          | 7 90    | 7 50          | 7 75    | 6 75             | 7 25    | 6 25                             | 7 30    |
| " 18.....    | 8 00                          | 8 30    | 7 25                          | 7 90    | 7 50          | 7 75    | 6 75             | 7 25    | 6 20                             | 7 35    |
| " 25.....    | 8 20                          | 8 50    | 7 30                          | 8 10    | 7 40          | 7 75    | 6 50             | 7 25    | 6 30                             | 7 60    |
| Nov 1.....   | 8 40                          | 8 75    | 7 50                          | 8 25    | 7 40          | 7 75    | 6 50             | 7 25    | 6 50                             | 7 75    |
| " 8.....     | 8 30                          | 9 00    | 7 50                          | 8 25    | 7 75          | 8 00    | 6 60             | 7 25    | 6 40                             | 8 00    |
| " 15.....    | 8 40                          | 9 00    | 7 50                          | 8 25    | 7 75          | 8 00    | 6 60             | 7 25    | 6 30                             | 7 75    |
| " 22.....    | 8 30                          | 8 90    | 7 40                          | 8 20    | 7 75          | 7 85    | 6 60             | 7 25    | 6 40                             | 7 75    |
| " 29.....    | 8 50                          | 9 15    | 7 40                          | 8 40    | 7 75          | 8 00    | 6 60             | 7 25    | 6 50                             | 7 50    |
| Dec. 6.....  | 8 75                          | 9 25    | 7 75                          | 8 60    | 7 75          | 8 00    | 6 60             | 7 25    | 6 65                             | 7 75    |
| " 13.....    | 8 75                          | 9 00    | 7 75                          | 8 60    | 8 25          | 8 50    | 6 50             | 7 50    | 6 65                             | 7 75    |
| " 20.....    |                               | 9 00    |                               | 7 75    | 8 00          | 8 25    | 6 50             | 7 35    | 6 50                             | 7 50    |
| " 27.....    | 8 00                          | 8 60    | 6 90                          | 7 50    | 7 50          | 8 00    | 6 50             | 7 35    | 6 65                             | 7 75    |
| 1912.        |                               |         |                               |         |               |         |                  |         |                                  |         |
| Jan. 3.....  | 8 00                          | 8 60    | 6 75                          | 7 25    | 7 50          | 8 00    | 6 50             | 7 35    |                                  |         |
| " 10.....    | 7 85                          | 8 35    | 6 60                          | 7 10    | 8 00          | 8 50    | 6 75             | 7 25    | 6 75                             | 7 75    |
| " 17.....    | 7 75                          | 8 35    | 6 60                          | 7 10    | 8 00          | 8 25    | 6 75             | 7 75    | 6 75                             | 8 00    |
| " 24.....    | 7 25                          | 7 85    | 6 10                          | 6 50    | 7 90          | 8 00    | 6 60             | 7 50    | 6 75                             | 7 85    |
| " 31.....    | 7 30                          | 7 90    | 6 10                          | 6 60    | 7 25          | 7 75    | 6 40             | 7 15    | 6 60                             | 7 60    |
| Feb. 7.....  | 7 50                          | 8 25    | 6 30                          | 6 75    | 8 00          | 8 15    | 7 00             | 7 50    | 6 75                             | 7 90    |
| " 14.....    | 7 50                          | 8 25    | 6 30                          | 6 75    | 7 75          | 8 00    | 7 00             | 7 50    | 6 65                             | 7 80    |
| " 21.....    | 7 50                          | 8 25    | 6 30                          | 6 75    | 7 65          | 8 00    | 6 65             | 7 25    | 6 50                             | 7 75    |
| " 28.....    | 7 75                          | 8 30    | 6 50                          | 7 00    | 7 65          | 8 00    | 6 65             | 7 25    | 6 60                             | 7 60    |
| Mar. 6.....  | 7 90                          | 8 40    | 6 75                          | 7 25    | 7 65          | 8 00    | 6 65             | 7 25    | 6 75                             | 8 00    |
| " 13.....    | 7 75                          | 8 25    | 6 70                          | 7 00    | 7 65          | 7 85    | 6 65             | 7 25    | 6 75                             | 7 85    |
| " 20.....    | 7 75                          | 8 30    | 6 70                          | 7 00    | 8 00          | 8 15    | 7 00             | 7 75    | 6 85                             | 8 00    |
| " 27.....    | 7 85                          | 8 40    | 7 00                          | 7 30    | 8 00          | 8 15    | 7 00             | 7 75    | 6 90                             | 8 00    |



3 GEORGE V. A. 1913

Wholesale Quotations for Cash Wheat from April 1, 1911, to March 30, 1912.

Prices for first three markets taken from "The Weekly Northwestern Miller"; Liverpool prices from "The Free Press," Winnipeg.

| Date.         | MINNEAPOLIS.                      | CHICAGO.                          | WINNIPEG.                         | LIVERPOOL.                                       |
|---------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
|               | No. 1<br>Northern.<br>Per Bushel. | No. 1<br>Northern.<br>Per Bushel. | No. 1<br>Northern.<br>Per Bushel. | No. 1<br>Northern.<br>(Manitoba.)<br>Per Bushel. |
| 1911.         | \$ cts.                           | \$ cts.                           | \$ cts.                           | \$ cts.  |
| April 1. .... | 0 92 <sup>7</sup> / <sub>8</sub>  | 0 96 <sup>1</sup> / <sub>2</sub>  | 0 88                              | Average<br>for<br>month<br>1 08                  |
| " 8. ....     | 0 95 <sup>5</sup> / <sub>8</sub>  | 0 98                              | 0 88 <sup>3</sup> / <sub>4</sub>  |  |
| " 15. ....    | 1 00 <sup>1</sup> / <sub>2</sub>  | 1 02                              | 0 92 <sup>1</sup> / <sub>2</sub>  |  |
| " 22. ....    | 1 00                              | 1 03                              | .....                             |  |
| " 29. ....    | 0 98 <sup>1</sup> / <sub>2</sub>  | 1 00 <sup>1</sup> / <sub>2</sub>  | 0 94 <sup>1</sup> / <sub>4</sub>  |  |
| May 6. ....   | 0 97 <sup>3</sup> / <sub>8</sub>  | 0 94 <sup>1</sup> / <sub>2</sub>  | 0 96                              | Average<br>for<br>month<br>1 06                  |
| " 13. ....    | 1 00 <sup>1</sup> / <sub>4</sub>  | 1 04 <sup>1</sup> / <sub>2</sub>  | 0 95 <sup>7</sup> / <sub>8</sub>  |  |
| " 20. ....    | 0 98 <sup>3</sup> / <sub>8</sub>  | 1 02 <sup>1</sup> / <sub>2</sub>  | 0 94                              |  |
| " 27. ....    | 0 97 <sup>1</sup> / <sub>2</sub>  | 1 02                              | 0 95 <sup>1</sup> / <sub>4</sub>  |  |
| June 3. ....  | 0 99 <sup>3</sup> / <sub>8</sub>  | 1 01                              | .....                             | Average<br>for<br>month<br>1 07                  |
| " 10. ....    | 0 95 <sup>1</sup> / <sub>2</sub>  | 0 97 <sup>1</sup> / <sub>2</sub>  | 0 97 <sup>1</sup> / <sub>4</sub>  |  |
| " 17. ....    | 0 94 <sup>1</sup> / <sub>2</sub>  | 0 96 <sup>1</sup> / <sub>2</sub>  | 0 95 <sup>1</sup> / <sub>4</sub>  |  |
| " 24. ....    | 0 97 <sup>1</sup> / <sub>8</sub>  | 0 99                              | 0 95 <sup>1</sup> / <sub>2</sub>  |  |
| July 1. ....  | 0 97 <sup>1</sup> / <sub>8</sub>  | 0 96 <sup>1</sup> / <sub>2</sub>  | .....                             | 1 08   |
| " 8. ....     | 1 00 <sup>1</sup> / <sub>4</sub>  | 1 00 <sup>1</sup> / <sub>4</sub>  | 0 97                              | 1 12 <sup>7</sup> / <sub>8</sub>                 |
| " 15. ....    | 0 97 <sup>1</sup> / <sub>4</sub>  | 1 04 <sup>1</sup> / <sub>4</sub>  | 0 95 <sup>3</sup> / <sub>4</sub>  | 1 09 <sup>3</sup> / <sub>4</sub>                 |
| " 22. ....    | 0 98                              | 1 04 <sup>1</sup> / <sub>4</sub>  | 0 95 <sup>3</sup> / <sub>4</sub>  |  |
| " 29. ....    | 1 01 <sup>1</sup> / <sub>4</sub>  | 1 06 <sup>1</sup> / <sub>2</sub>  | 0 95 <sup>1</sup> / <sub>4</sub>  |  |
| Aug. 5. ....  | 1 06                              | 1 10 <sup>1</sup> / <sub>4</sub>  | 0 98                              | 1 14   |
| " 12. ....    | 1 05 <sup>1</sup> / <sub>2</sub>  | 1 12                              | 0 99 <sup>1</sup> / <sub>4</sub>  |  |
| " 19. ....    | 1 05 <sup>1</sup> / <sub>2</sub>  | 1 04                              | 0 98 <sup>3</sup> / <sub>4</sub>  |  |
| " 26. ....    | 1 04                              | 1 08                              | 1 01 <sup>1</sup> / <sub>2</sub>  |  |
| Sept. 2. .... | 1 04                              | 1 07                              | .....                             | 1 16 <sup>3</sup> / <sub>8</sub>                 |
| " 9. ....     | 1 05 <sup>1</sup> / <sub>2</sub>  | 1 08                              | .....                             | 1 20   |
| " 16. ....    | 1 02 <sup>1</sup> / <sub>2</sub>  | 1 04 <sup>1</sup> / <sub>2</sub>  | 0 99 <sup>1</sup> / <sub>4</sub>  |  |
| " 23. ....    | 1 11 <sup>1</sup> / <sub>4</sub>  | 1 07 <sup>1</sup> / <sub>4</sub>  | 1 00                              |  |
| " 30. ....    | 1 07                              | 1 10 <sup>1</sup> / <sub>2</sub>  | 1 00                              |  |
| Oct. 7. ....  | 1 08 <sup>1</sup> / <sub>4</sub>  | 1 10 <sup>3</sup> / <sub>4</sub>  | 0 99 <sup>1</sup> / <sub>2</sub>  |  |
| " 14. ....    | 1 09 <sup>1</sup> / <sub>2</sub>  | 1 13 <sup>1</sup> / <sub>4</sub>  | 0 99 <sup>1</sup> / <sub>2</sub>  | 1 23 <sup>1</sup> / <sub>2</sub>                 |
| " 21. ....    | 1 12 <sup>1</sup> / <sub>4</sub>  | 1 16 <sup>1</sup> / <sub>2</sub>  | 1 02                              |  |
| " 28. ....    | 1 07 <sup>1</sup> / <sub>2</sub>  | 1 12                              | 0 98 <sup>1</sup> / <sub>4</sub>  |  |
| Nov. 4. ....  | 1 03                              | 1 07 <sup>1</sup> / <sub>2</sub>  | .....                             |  |
| " 11. ....    | 1 04 <sup>1</sup> / <sub>2</sub>  | 1 08 <sup>1</sup> / <sub>2</sub>  | 0 98                              | 1 21 <sup>1</sup> / <sub>2</sub>                 |
| " 18. ....    | 1 05 <sup>1</sup> / <sub>2</sub>  | 1 09 <sup>1</sup> / <sub>2</sub>  | 0 99 <sup>5</sup> / <sub>8</sub>  |  |
| " 25. ....    | 1 05 <sup>1</sup> / <sub>4</sub>  | 1 08 <sup>1</sup> / <sub>2</sub>  | 0 97                              |  |
| Dec. 2. ....  | 1 03 <sup>1</sup> / <sub>2</sub>  | 1 08                              | 0 96 <sup>1</sup> / <sub>4</sub>  |  |
| " 9. ....     | 0 99                              | 1 07                              | 0 94 <sup>3</sup> / <sub>4</sub>  | 1 23 <sup>1</sup> / <sub>2</sub>                 |
| " 16. ....    | 1 03 <sup>1</sup> / <sub>4</sub>  | 1 07                              | 0 94 <sup>1</sup> / <sub>2</sub>  |  |
| " 23. ....    | .....                             | .....                             | .....                             |  |
| " 30. ....    | 1 06 <sup>3</sup> / <sub>4</sub>  | 1 07 <sup>1</sup> / <sub>2</sub>  | 0 93 <sup>1</sup> / <sub>4</sub>  |  |
| 1912.         |                                   |                                   |                                   |  |
| Jan. 6. ....  | 1 09                              | 1 10                              | 0 94 <sup>3</sup> / <sub>8</sub>  | 1 21 <sup>1</sup> / <sub>2</sub>                 |
| " 13. ....    | 1 06 <sup>1</sup> / <sub>4</sub>  | 1 09                              | 0 95 <sup>1</sup> / <sub>4</sub>  |  |
| " 20. ....    | 1 06                              | 1 10                              | 0 96 <sup>1</sup> / <sub>4</sub>  |  |
| " 27. ....    | 1 07 <sup>1</sup> / <sub>4</sub>  | 1 11                              | 0 96 <sup>1</sup> / <sub>4</sub>  |  |
| Feb. 3. ....  | 1 07                              | 1 13                              | 0 97 <sup>1</sup> / <sub>4</sub>  | 1 22 <sup>3</sup> / <sub>8</sub>                 |
| " 10. ....    | 1 07 <sup>1</sup> / <sub>2</sub>  | 1 13                              | 0 98 <sup>1</sup> / <sub>4</sub>  | 1 24 <sup>7</sup> / <sub>8</sub>                 |
| " 17. ....    | 1 03 <sup>1</sup> / <sub>2</sub>  | 1 11                              | 0 96 <sup>1</sup> / <sub>4</sub>  | 1 23 <sup>1</sup> / <sub>2</sub>                 |
| " 24. ....    | 1 05                              | 1 09 <sup>1</sup> / <sub>2</sub>  | 0 96 <sup>1</sup> / <sub>2</sub>  | 1 23 <sup>1</sup> / <sub>2</sub>                 |
| March 2. .... | 1 08 <sup>7</sup> / <sub>8</sub>  | 1 12 <sup>1</sup> / <sub>2</sub>  | 0 98 <sup>1</sup> / <sub>2</sub>  |  |
| " 9. ....     | 1 09 <sup>1</sup> / <sub>2</sub>  | 1 12 <sup>1</sup> / <sub>2</sub>  | 0 99                              |  |
| " 16. ....    | 1 06 <sup>1</sup> / <sub>2</sub>  | 1 09 <sup>1</sup> / <sub>2</sub>  | 0 98                              |  |
| " 23. ....    | 1 08 <sup>1</sup> / <sub>2</sub>  | 1 12 <sup>1</sup> / <sub>2</sub>  | 0 99 <sup>1</sup> / <sub>2</sub>  |  |
| " 30. ....    | 1 07 <sup>1</sup> / <sub>8</sub>  | 1 11 <sup>1</sup> / <sub>2</sub>  | .....                             |  |



## SESSIONAL PAPER No. 15a

Wholesale Quotations for Malting Barley Each Week from April 1, 1911, to March 30, 1912.

(From the "Weekly Northwestern Miller.")

| Week.        | MINNEAPOLIS.                      |       | BUFFALO.                          |       | MILWAUKEE.            |      | TORONTO.              |        | WINNIPEG.             |      |
|--------------|-----------------------------------|-------|-----------------------------------|-------|-----------------------|------|-----------------------|--------|-----------------------|------|
|              | " Best Malt-<br>ing " per bushel. |       | " Best Malt-<br>ing " per bushel. |       | " No. 2 " per bushel. |      | " No. 2 " per bushel. |        | " No. 3 " per bushel. |      |
| 1911.        | \$                                | cts.  | \$                                | cts.  | \$                    | cts. | \$                    | cts.   | \$                    | cts. |
| April 1..... | 1                                 | 02    | 1                                 | 10    | 1                     | 05   | —                     | 63     | —                     | 65   |
| " 8.....     | 1                                 | 05    | 1                                 | 09    | 1                     | 04½  | —                     | 63     | —                     | 70   |
| " 15.....    | 1                                 | 05½   | 1                                 | 10    | 1                     | 05   | —                     | 63     | —                     | 70   |
| " 22.....    | 1                                 | 08    | 1                                 | 12    | 1                     | 10½  | —                     | 70     | —                     | 68   |
| " 29.....    | 1                                 | 10    | 1                                 | 10    | 1                     | 08   | —                     | 70     | —                     | 69   |
| May 6.....   | 1                                 | 05    | 1                                 | 10    | 1                     | 09   | —                     | 70     | —                     | 69   |
| " 13.....    | 0                                 | 95    | 1                                 | 06    | 1                     | 00   | —                     | 70     | —                     | 69   |
| " 20.....    | 0                                 | 97    | 1                                 | 03    | 1                     | 00   | —                     | 70     | —                     | 68   |
| " 27.....    | 0                                 | 94    | .....                             | ..... | 1                     | 00   | —                     | 70     | —                     | 68   |
| June 3.....  | 0                                 | 86    | .....                             | ..... | 0                     | 90   | —                     | 70     | —                     | 68   |
| " 10.....    | 0                                 | 93½   | 0                                 | 96    | 0                     | 75   | —                     | 68     | —                     | ..   |
| " 17.....    | 0                                 | 95    | 1                                 | 00    | 0                     | 97   | —                     | 65     | —                     | ..   |
| " 24.....    | 1                                 | 03    | 1                                 | 12    | 1                     | 15   | —                     | 60     | —                     | ..   |
| July 1.....  | 0                                 | 99    | 1                                 | 12    | 1                     | 05   | —                     | 60     | —                     | ..   |
| " 8.....     | 1                                 | 02½   | 1                                 | 10    | 1                     | 07   | —                     | 60     | —                     | 60   |
| " 15.....    | 1                                 | 05    | .....                             | ..... | 1                     | 10   | —                     | 60     | —                     | ..   |
| " 22.....    | 1                                 | 07    | .....                             | ..... | 1                     | 10   | —                     | 60     | —                     | 59   |
| " 29.....    | 1                                 | 05    | 1                                 | 12    | 1                     | 00   | —                     | 60     | —                     | 59   |
| Aug. 5.....  | 1                                 | 04    | 0                                 | 98    | 1                     | 09   | —                     | 60     | —                     | 59½  |
| " 12.....    | 1                                 | 09    | 1                                 | 12    | 1                     | 10½  | —                     | 60     | —                     | 60   |
| " 19.....    | 1                                 | 12    | 1                                 | 14    | 1                     | 12   | —                     | 60     | —                     | 61   |
| " 26.....    | 1                                 | 14    | 1                                 | 17    | 1                     | 16   | —                     | 65     | —                     | 68   |
| Sept. 2..... | 1                                 | 14    | 1                                 | 18    | 1                     | 18   | —                     | 65     | —                     | 72   |
| " 9.....     | 1                                 | 14    | 1                                 | 15    | 1                     | 21   | —                     | 80     | —                     | 72   |
| " 16.....    | 1                                 | 18    | 1                                 | 14    | 1                     | 20   | —                     | 80     | —                     | 72½  |
| " 23.....    | 1                                 | 16    | 1                                 | 18    | 1                     | 22   | —                     | 83     | —                     | 71   |
| " 30.....    | 1                                 | 18    | 1                                 | 14    | 1                     | 22   | —                     | 83     | —                     | 74   |
| Oct. 7.....  | 1                                 | 18    | 1                                 | 14    | 1                     | 24   | —                     | 83     | —                     | 72   |
| " 14.....    | 1                                 | 15    | 1                                 | 12    | 1                     | 23   | —                     | 90     | —                     | 70   |
| " 21.....    | 1                                 | 18    | 1                                 | 16    | 1                     | 20   | —                     | 97     | —                     | 71½  |
| " 28.....    | 1                                 | 18    | 1                                 | 17    | 1                     | 08   | —                     | 97     | —                     | 70   |
| Nov. 4.....  | 1                                 | 18    | 1                                 | 16    | 1                     | 22   | —                     | 97     | —                     | 65   |
| " 11.....    | 1                                 | 17    | 1                                 | 14    | 1                     | 22   | —                     | 90     | —                     | ..   |
| " 18.....    | 1                                 | 19    | 1                                 | 16    | 1                     | 26   | —                     | 90     | —                     | 66   |
| " 25.....    | 1                                 | 19    | 1                                 | 14    | 1                     | 25   | —                     | 88     | —                     | ..   |
| Dec. 2.....  | 1                                 | 18    | 1                                 | 18    | 1                     | 23   | —                     | 86     | —                     | ..   |
| " 9.....     | 1                                 | 13    | 1                                 | 18    | 1                     | 22   | —                     | 80     | —                     | ..   |
| " 16.....    | 1                                 | 14    | 1                                 | 14    | 1                     | 22   | —                     | 76     | —                     | ..   |
| " 23.....    | .....                             | ..... | 1                                 | 18    | 1                     | 25   | —                     | 80     | —                     | ..   |
| " 30.....    | 1                                 | 22    | 1                                 | 18    | 1                     | 28   | —                     | 80     | —                     | ..   |
| 1912.        |                                   |       |                                   |       |                       |      |                       |        |                       |      |
| Jan. 6.....  | 1                                 | 30    | 1                                 | 22    | 1                     | 30   | —                     | 85     | —                     | 65   |
| " 13.....    | 1                                 | 28    | 1                                 | 25    | 1                     | 32   | —                     | 85     | —                     | 67   |
| " 20.....    | 1                                 | 25    | 1                                 | 25    | 1                     | 33   | —                     | 90     | —                     | 68   |
| " 27.....    | 1                                 | 28    | 1                                 | 20    | 1                     | 33   | —                     | 93     | —                     | 68   |
| Feb. 3.....  | 1                                 | 26    | 1                                 | 20    | 1                     | 32   | —                     | 95     | —                     | 67   |
| " 10.....    | 1                                 | 27    | 1                                 | 22    | 1                     | 31   | —                     | \$1 00 | —                     | 67   |
| " 17.....    | 1                                 | 27    | 1                                 | 20    | 1                     | 28   | —                     | 97     | —                     | 70   |
| " 24.....    | 1                                 | 27    | 1                                 | 20    | 1                     | 28   | —                     | 95     | —                     | 63   |
| March 2..... | 1                                 | 25    | 1                                 | 22    | 1                     | 26   | —                     | 95     | —                     | 63   |
| " 9.....     | 1                                 | 25    | 1                                 | 22    | 1                     | 29   | —                     | 92     | —                     | 62   |
| " 16.....    | 1                                 | 25    | 1                                 | 20    | 1                     | 28   | —                     | 92     | —                     | 62   |
| " 23.....    | 1                                 | 26    | 1                                 | 22    | 1                     | 32   | —                     | 92     | —                     | 62   |
| " 30.....    | 1                                 | 30    | 1                                 | 24    | 1                     | 34   | —                     | 92     | —                     | 65   |



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Wholesale Quotations for Spring Wheat Flour, Second Patent, in Sacks, in First Week of each month from April, 1911, to March, 1912.

(From "The Northwestern Miller").

|              | NEW YORK.             | CHICAGO.             | MONTREAL.                  | TORONTO.             | WINNIPEG.    | LONDON.                            | LIVERPOOL.                         |
|--------------|-----------------------|----------------------|----------------------------|----------------------|--------------|------------------------------------|------------------------------------|
| Month.       | F. O. B.<br>New York. | F. O. B.<br>Chicago. | Delivered to<br>Retailers. | F. O. B.<br>Toronto. | "Delivered"  | C. I. F.<br>Quotation<br>by Mills. | C. I. F.<br>Quotation<br>by Mills. |
|              | per 196 lbs.          | per 196 lbs.         | per 196 lbs.               | per 196 lbs.         | per 196 lbs. | per 196 lbs.                       | per 196 lbs.                       |
| 1911.        | \$ cts. \$ cts.       | \$ cts. \$ cts.      | \$ cts.                    | \$ cts.              | \$ cts.      | \$ cts.                            | \$ cts.                            |
| April.. .. . | 4 40-4 70             | 4 25-4 50            | 5 10                       | 4 90                 | 4 80         | 4 12                               | 4 12                               |
| May. .... .  | 4 70-4 90             | 4 40-4 55            | 4 80                       | 4 60                 | 4 80         | 4 31                               | 4 28                               |
| June..... .  | 4 60-4 90             | 4 25-4 50            | 4 80                       | 4 60                 | 4 80         | 4 31                               | 4 20                               |
| July..... .  | 4 60-4 90             | 4 30-4 50            | 4 80                       | 4 60                 | 4 80         | 4 41                               | 4 29                               |
| August.....  | 4 65-4 90             | 4 40-4 60            | 4 80                       | 4 60                 | 4 80         | 4 54                               | 4 51                               |
| Sept..... .  | 4 75-5 15             | 4 60-4 85            | 4 90                       | 4 80                 | 5 00         | 4 58                               | 4 54                               |
| Oct..... .   | 4 95-5 30             | 4 75-5 10            | 4 90                       | 4 80                 | 5 00         | 4 58                               | 4 54                               |
| Nov..... .   | 4 85-5 25             | 4 75-5 00            | 4 90                       | 5 00                 | 5 20         | 4 62                               | 4 58                               |
| Dec..... .   | 4 85-5 25             | 4 70-5 10            | 5 10                       | 5 00                 | 5 20         | 4 54                               | 4 54                               |
| 1912.        |                       |                      |                            |                      |              |                                    |                                    |
| Jan..... .   | 4 95-5 25             | 4 75-5 15            | 5 10                       | 5 00                 | 5 20         | 4 54                               | 4 51                               |
| Feb..... .   | 5 00-5 30             | 4 75-5 10            | 5 10                       | 5 00                 | 5 20         | 4 71                               | 4 70                               |
| March.....   | 4 75-4 95             | 4 80-5 05            | 5 10                       | 5 00                 | 5 00         | 4 62                               | 4 62                               |

REPORTS OF CARGO INSPECTORS IN GREAT BRITAIN.

Following are the annual reports of the cargo inspectors employed under the direction of this Branch at Liverpool, Manchester, Glasgow, Bristol and London.

REPORT OF CHIEF CARGO INSPECTOR FOR GREAT BRITAIN (MR. A. W. GRINDLEY).

LIVERPOOL, March 31, 1912.

I have the honour to submit my report for the year ending March 31, 1912.

During the past year there has been no change in the staff of cargo inspectors employed in Great Britain and their work has been carried on in a most satisfactory manner. All Canadian perishable food products landed at the ports of Liverpool, Manchester, London, Bristol and Glasgow, have been carefully watched, and detailed reports regularly forwarded to Ottawa. Besides the regular printed forms, which show how and where the goods are carried and the condition in which they are discharged at the various ports, the inspectors have made from time to time special reports relative to the packing, marking, &c, of Canadian food products exported to Great Britain. During the apple season the inspectors attend as many of the sales as possible.

I am pleased to report that all officials belonging to the different shipping companies, as well as the members of the fruit and provision trades at the ports where Canadian cargo inspectors are located, extend every courtesy to the representatives of the Canadian Department of Agriculture.



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## APPLES.

Climatic influences last year caused most of the apples by December to show a spent or over-ripe condition, similar to what is expected in normal seasons about the first of March, the result being that before Christmas, when prices generally stiffen, the Liverpool market sagged off fully two shillings per barrel on apples which had been held in *ordinary warehouses*.

Apples, however, which had been carefully selected and kept in cold storage stood up well, were of fine appearance and were crisp and juicy. This well selected fruit, which had been held in cold storage, was in keen demand by the best class of buyers, and realized good prices throughout the season.

## SMALL LOTS OF MIXED VARIETIES.

Immense quantities of small lots of mixed varieties are still exported from Canada. These small mixed lots hurt the general tone of the market, as important buyers will not give them their attention, the result often being a dull dragging market with declining prices.

## APPLES PACKED IN BOXES.

The export of selected apples—properly packed in boxes—containing about 40 pounds net of fruit—should be encouraged as there is a growing demand for the box package, supplied at a reasonable price to the consumer.

Prizes are now offered at British fruit shows for apples packed in such commercial packages as barrels and boxes, properly graded and packed, and during the past season apples from Kent, well graded and packed neatly in boxes, were, on the same market in Liverpool, quickly cleared at high prices when competing against Canadian and United States apples packed in barrels.

## A SUCCESSFUL SHIPMENT OF PEACHES.

One shipment of peaches received here last fall turned out so successful in every way as to prove that with peaches of proper quality and in proper condition when started and kept under proper supervision all along the line, success can be guaranteed. I refer to a consignment of Canadian peaches, which were carefully selected and packed in an ideal manner under the supervision of Mr. W. W. Moore, Chief of the Markets Division. These peaches were shipped from Jordan, Ontario, to Montreal in a refrigerator car on September 13, 1911, thence in cold storage by the ss. *Megantic*, sailing on September 16. They were discharged at Liverpool on September 26 and forwarded in a refrigerator car to the 'Festival of the Empire Exhibition,' Crystal Palace, London, and were on display on September 27, or fourteen days after leaving Jordan. The thermograph record showed a temperature while at sea of 36° Fah., which was allowed to rise to 44° Fah. before the ship's refrigerator chamber was opened. These peaches were kept on exhibition on an open stand for exactly one month, and would have kept longer but for a spell of warm, muggy weather. Every link in the chain connected with this consignment appears to have been as nearly perfect as possible—quality, variety, and size of fruit, style of packing, rapidity of transportation from packing house in Canada to Crystal Palace, London, and finally the sound and proper degree of ripeness in which the peaches reached their destination. A commercial consignment which came at the same time and under similar conditions had among them some peaches which had been picked too green, and they never matured properly, being sour, dry and lacking in colour and flavour. Other consignments received at Liverpool by different steamers and re-shipped by rail to various markets were forwarded by slow trains and not in iced cars and by missing the proper market day at Covent Garden realized lower prices than would otherwise have been the case.



## CHEESE.

Last year Mr. G. G. Publow, Chief Instructor and Sanitary Inspector for Eastern Ontario, visited Great Britain and made very complete inquiries relative to the British end of the Canadian cheese trade. Visits from such experienced and practical men as Mr. Publow should be encouraged, not only in connection with cheese, but also with reference to fruit and other Canadian food products.

## SIZE AND WEIGHT OF CHEESE EXPORTED.

Some complaints are made regarding Canadian cheese being too large and heavy. These complaints come from men all along the line who have to lift up or take down cheese piled six or seven high, and these heavy weights, from 80 to 100 pounds, are also objectionable in many of the retail shops in Great Britain which are in charge of women and girls—75 to 80 pounds are popular sizes. Over 80 pounds is too heavy for one man to handle and he often lets it drop as the easiest way of getting it down, the result being a broken box and perhaps a damaged cheese. As there is a limited demand for large cheese to place in show windows, it might be advisable to use the New Zealand type of crate for heavy cheese, i.e., place two cheese in a crate strongly made of slats. The New Zealand crate is very seldom broken, the weight being sufficient to require two men to handle it, so there is no careless rough handling such as the average Canadian cheese box has to meet during transportation.

Complaints are still heard regarding the shortage of actual weights of cheese when compared to the weight stencilled on the box; even after a liberal allowance is made for average shrinkage cheese have been 10 pounds lighter than the marked weight. I have yet to see a weight stencilled which is less than the cheese weighs, the errors being always on the short side. All cheese boxes should be stencilled with 'Canadian Produce' together with the factory mark and weight.

## COMPULSORY REGISTRATION OF CHEESE FACTORIES AND CREAMERIES.

It would be a good thing if all cheese factories and creameries had a number registered at Ottawa and stencilled it plainly on all boxes of butter and cheese. This would enable cargo inspectors to report specifically to Ottawa those who were committing frauds of any kind, such as plugged cheese, false weights, &c. At present we find the most reliable shippers using marks which can easily be identified, but shippers of inferior goods send them forward with no mark by which they can be traced. These unmarked or badly marked packages often fall on the hands of the shipping company concerned, which has to dispose of the goods as best it can.

Under the 'Fruit Marks Act' frauds of any kind can readily be traced to the parties responsible, as it is compulsory to stencil the full name and address of the packer upon the package. A registered number stencilled on boxes of cheese or butter would answer the same purpose and take up little space, as the number could be placed in the centre of a stencil plate also bearing the words 'Canadian Produce.'

The responsibility should come forward with the package so that inspectors could do effective work without causing unnecessary irritation when endeavouring to trace the maker, or shipper, of the goods at fault.

The British Government may amend the Merchandise Marks Act, making it compulsory to mark country of origin. As it now stands, articles bearing no marks are allowed to enter; so Canada would only be protecting her own produce by having a Marks Act by which cheese and butter could be identified as readily as a box or a barrel of Canadian apples, or as readily as the dairy products of foreign countries which are exported to Great Britain.





FIG. 1.



FIG. 2.

TWO CENTRAL ONTARIO CHEESE FACTORIES WITH COOL CURING ROOMS.

1. Sidney Town Hall, Hastings County.

2. Massassaga, Prince Edward County.







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## REGARDING BREAKAGE OF CANADIAN CHEESE BOXES.

We find at the different ports in Great Britain as well as in the warehouses of the importers, boxes coming from certain districts and bearing certain well-known marks, delivered in *good* condition, while we see other boxes bearing other brands, which have been handled under exactly the same conditions, and delivered at the same time, a high percentage of which are delivered in a *broken* and *ragged* condition. We again find boxes well made and of good quality but which do not fit the cheese, being too large in diameter or too deep. Such misfits are very liable to be broken, and if the cheese is more than a trifle higher than the box, the cheese itself is liable to be damaged before being delivered at the retail shop. These two faults, poor quality of boxes and badly fitted boxes, must be remedied at the factory. The cargo inspectors in Great Britain find a considerable percentage of the cheese discharged from the holds of the various steamers 'roped,' showing that they had been broken before being stowed on the steamer at Montreal, Quebec, Halifax, St. John, or at American ports. After cargo has been broken into at the British ports, a considerable percentage of boxes are broken during the rush work of discharging cargo. Nearly if not all of this damage is done in the holds of the steamer. Where 80 to 100 pound cheese are stowed six or seven high, the average dock labourer, unless under constant supervision, prefers to get the top cheese down by any method except carefully lifting it down. This is how and where the bulk of the cheese boxes are broken at the British end of the line.

Very few boxes are broken after leaving the hold of the vessel, and what breakage does occur can hardly be prevented under the present conditions of discharging cargo at the ports of Glasgow, Bristol, Liverpool and Manchester. As a rule we find a smaller percentage of breakage at London, chiefly due to the mechanical appliances used for discharging and conveying boxes direct from the ship's hold into the warehouse at the Surrey commercial docks.

Donald's patent ship elevator-conveyor, manufactured by Messrs. Rowson, Drew & Clydesdale, Ltd., London, is used by a number of shipping and railway companies where rapid loading and discharging of cargo is desired. This elevator-conveyor works continuously and consequently it loads or discharges more rapidly than cranes or derricks which work intermittently. The ship's winch drive can be utilized to work this elevator-conveyor if electric power is not available.

With properly made and well fitted boxes to begin with, with proper care and close supervision where manual labour is necessary, and with mechanical and up-to-date appliances where possible for loading and discharging, breakage and damage to cargo would be reduced to the minimum.

A. W. GRINDLEY.

## REPORT OF THE LIVERPOOL AND MANCHESTER CARGO INSPECTOR (MR. W. CARTER).

LIVERPOOL, March 31, 1912.

I herewith beg to submit the following report for the year 1911-12:—

## CHEESE (540,553 BOXES).

I am sorry to say there has been little or no improvement in the condition of cheese boxes landed here or in Manchester. There is still the same high percentage of broken and tied boxes, and the following are the chief causes of this: The poor quality of many of the boxes used, especially those from the Quebec factories, cheese packed in badly fitting boxes, careless and rough handling, the growing tendency to increase the weights of cheese, which means that the dock worker will not lift them but in many cases throws them down from six or seven high, and the hurry and rush with which cheese are now landed.



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The approximate average percentage broken and tied boxes from both winter and summer ports is as follows:—

|  | Tied.   | Not Tied |
|--|---------|----------|
| Manchester Liners from Montreal.. . . .      | 19 p.c. | 12 p.c.  |
| Allan Line from Montreal.. . . .             | 19 “    | 11 “     |
| “ Halifax (winter service).. . . .           | 7 “     | 3 “      |
| C.P.R. Line from Montreal and Quebec.. . . . | 17 “    | 11 “     |
| “ Halifax (winter service).. . . .           | 25 “    | 15 “     |
| White Star-Dominion Line from Montreal...    | 19 “    | 12 “     |
| “ “ “ Portland, Me.                          |         |          |
| (winter service).. . . .                     | 20 “    | 13 “     |

The bulk of this damage is found in certain marks that are nearly always in bad order, and it is a remarkable fact that, while some brands are in bad condition, others from the same hatch and receiving exactly the same handling are in very good condition.

In spite of the exceptionally warm summer, and the delay in transit during the railway and dock strikes last August, I am pleased to say that there was very little complaint re sweated cheese. During the strike the steamship companies did everything possible to prevent any damage to perishable goods by opening hatches, keeping fans going, and watering the quay floors to keep them cool.

There are still a few cheese coming forward without either shipper's or factory brands on them; also complaints about cheese being cut and pilfered.

#### BUTTER (22,097 PACKAGES).

There was a great increase in butter shipments to this port, and while the butter itself was in excellent condition, not a single package was sacked and many of them were more or less dirty. Temperatures were satisfactory, averaging about 20°; refrigerators were kept clean and dry, but I would like to see more dunnage used by the shipping companies when stowing butter.

There was also a decided improvement in clearing butter from the quay after landing, much of it being taken away within twenty-four hours.

#### EGGS (3,566 CASES).

These arrived in good order and condition generally, the only complaint being that some of the cases were insecurely fastened, which led to more or less pilferage.

#### FROZEN MEATS (13,419 PACKAGES).

A big increase over last year, and though there was a great improvement in the packages (especially the crates), there is still a big percentage that land broken. What is wanted is a stronger, heavier crate or case.

#### BACON (28,831 BOXES AND 120 BALES).

Practically all boxes landed in good order and condition, but bacon packed in bales (Danish style) is very liable to get badly knocked about.

#### TRIPE (2,660 BAGS).

These landed in good order and condition.

#### CANNED MEATS (2,880 CASES).

These were Prince Edward Island produce and landed in good order. They all consisted of canned beef and mutton.



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## PEARS (22 BARRELS).

These landed in very bad condition. They were Bartletts, of excellent quality, but they must have been fully ripe when packed for they were almost worthless when landed here. They should have been carefully packed in boxes, for pears of this class, full ripe, would not stand the pressure of being packed in barrels.

## PEACHES (380 CRATES).

This consignment of peaches landed in excellent order and condition. They were sound, well packed and of very nice quality. They were forwarded to London soon after landing, and I believe gave every satisfaction there.

## APPLES (370,662 BARRELS) ONTARIO AND NOVA SCOTIAN.

*Re* condition of the fruit, this has not been a satisfactory season, particularly for Ontarian apples. The first few shipments were in good condition, but after them we got several shipments of fall apples that showed a lot of waste, and got worse very quickly after being opened a day or two. Most of this waste was a peculiar dry rot, and apples from the United States were affected in exactly the same way.

When the winter varieties began to arrive this particular waste gradually disappeared, and we got some good sound apples till January when they began to show a lot of frost, and most of them have been showing it since. One peculiar feature was that one week we had a shipment that were nearly all badly frozen, and the following week another shipment that was only slightly touched.

The quality of the Ontario fruit has been generally good, and I have received but few complaints *re* faced or topped apples, and no complaints *re* apples being wrongly described. With the exception of Golden Russets and Fallawaters, Nova Scotian apples have been decidedly small, and many branded No. 1 would have been more truly described if marked No. 2, while most No. 2's have been very small.

Both Ontario and Nova Scotian barrels have been satisfactory, nothing but sound strong packages being used, though the Nova Scotians are not so good or well made as those from Ontario.

## APPLES (9,334 BOXES).

While the condition and quality of these were similar to the barrels, the packing and package left a lot to be desired. They were put up in a common box, badly sorted, and none of them were papered. It seems that some Canadian packers will not take the trouble to pack box apples properly, which is a great pity, for I am certain that there is a good market here for well graded and well packed box apples such as Spies, Kings, Snows, &c.

## CANNED APPLES (3,644 CASES).

These all landed in good order.

## CRANBERRIES (5 BARRELS).

This small shipment was in good condition. They realized \$5.22 per barrel, and would have done a lot better if they had been packed in boxes instead of barrels. There is a fair demand for box cranberries here, and this market could do with a small regular supply.

## POULTRY.

Not a single case arrived this season.

I beg to offer the following suggestions with a view to improving carrying conditions, &c., of Canadian produce.



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That when possible no provisions should be carried in the hatch immediately aft the ship's engine room, as in several ships this hatch has proved to be very much hotter than the others.

That the shipping companies should be asked to provide and use more dunnage with butter and cheese.

That where possible cheese should be stowed all together and not mixed indiscriminately with other cargo as at present.

That, with the present day mechanical appliances the shipping companies should be asked to provide something more up-to-date for landing cheese, as the methods in use at present are rather crude.

## ACKNOWLEDGMENTS.

For the courtesy and assistance of all officials of the various shipping companies, I am again indebted, and here tender my sincere thanks.

W. CARTER.

## REPORT OF THE GLASGOW CARGO INSPECTOR (MR. JAS. A. FINDLAY).

GLASGOW, March 31, 1912.

The Canadian import season of 1911-12 suffered considerably from labour unrest amongst transport workers. In the early part of the season, a sailors' and firemen's strike contributed difficulties to the maintainance of regular sailings and this was followed by sectional strikes amongst dock labourers, which occurred intermittently for some months, resulting in a stoppage of discharging or loading operations for a few hours or odd days at a time. The increasing demands of the workers finally culminated in a general strike with a complete cessation of labour at the Glasgow harbour for four weeks in January and February, during which period steamers arriving were unable to be discharged or only partially so, and no sailings to Canadian or United States of America ports were possible. Owing to this strike apple shipments suffered serious deterioration from being detained on board, and at moment of writing a universal strike among British coalminers, which has existed for three weeks, is gradually paralysing trade in all directions and contributing to low prices for Canadian apples.

Apart from transport difficulties, a review of the present season presents several satisfactory features, notable among which are increased importations of butter, eggs, apples and canned apples, and the record price which has prevailed for Canadian cheese throughout the season. This high level was due to an unusually dry summer both in this country and England, curtailing the pasture and crops generally in the latter country, though the heavier soils of the cheese manufacturing districts in Scotland were hardly affected, and the Scotch cheese make was almost an average one. In England there was an abnormal shortage and English buyers drew largely on the Scotch supply thus creating a greater demand for Canadian cheese here than might otherwise have existed. Cheese importations notwithstanding show a decrease of over 6,000 boxes to Glasgow, and almost 8,000 to Leith compared with last season.

The condition on arrival continues satisfactory, an almost total absence of heated cheese and only slight evidence of grease on skins of some parcels being aparent. In considering the quality of Canadian cheese a gratifying feature is the lack of insistent criticism and I am glad to state that only in isolated cases has any serious unfavourable feature been reported. This general satisfaction does not mean that the quality was faultless for evidences of former errors were apparent: several parcels were green on arrival and discrepancies in marked weights with actual net



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weights still exist, but the active demand at satisfactory prices inclined dealers to attach less importance to faults which evidently were not affecting sales. However, the prevailing opinion is that Canadian cheese were very even in quality and that good work is being done by the dairy instructors in Canada.

*Boxes.*—The increasing percentage of damaged cheese boxes on arrival is a condition which must sooner or later bring about some concerted efforts for improvement. Undoubtedly the primary cause of much of the breakage lies in the quality and character of the box and the matter for wonder is not that some parcels come with 25 to 50 per cent tied and broken, but that so many boxes arrive intact in view of the amount of handling, the slimness of the boxes and the irregularity of fit. The large proportion of damaged boxes would warrant the department taking steps to recommend to factorymen a box of certain weight and strength according to the weight of the cheese, for undoubtedly the initial cause lies there. Boxes from the Ingersoll district are amongst the strongest and best fitting packages and they always show a very small percentage compared with others.

The points in transit where breakage takes place (it being understood that all tying of boxes is done in Canada) may be stated as about equally divided between ports of loading and discharging. Under the system of discharging at this port by the Allan and Donaldson lines, workers fill wooden or iron tubs with cheese in the holds and these are hoisted ashore by cranes and then emptied by men in the sheds. This season discharging has not been accomplished as carefully as formerly owing to discontent and wilful carelessness amongst the workers. Moreover the size and shape of the tubs encourage breakage as they are too small for the number of cheese loaded and the men are inclined to drop cheese from edge of top to bottom of tub. I have discussed the subject of an improved tub or means of discharging here and this is being considered by the shipping companies; meantime, it has been suggested that some mechanical system of discharging be adopted here for cheese and small sundry cargo, but the idea is not considered feasible in view of the small shipments of cheese per steamer, the fact that they are stowed in the same holds with other cargo, and the loss of time and extra expense incurred in erecting and dismantling an elevator-conveyor. Importers here, however, would be glad to lend support and backing to the adoption of any scheme calculated to minimize breakages.

## BUTTER.

Butter shipments show an expansion. There were 4,059 boxes and 13 addressed packages imported, as against 1,256 boxes and 7 tubs last year. Of this total 2,841 boxes were carried at a temperature of 15 to 25 degrees and the remainder from 35 to 40 degrees, the bulk at the latter temperatures being stowed with bacon. Owing to heavy shipments of United States bacon in refrigerators, it frequently happened that a spare chamber for butter was not available in some of the steamers. With the exception of about 700 boxes, all were lifted from the quay within two days of landing (788 were lifted on day of landing, 2,214 on day following, 365 second day, 226 fifth day, 230 ninth day and 236 tenth day). The last three lots ranged in temperature from 52 to 58 degrees at time of delivery. All packages were unsacked this year.

*Condition and quality.*—The condition on arrival offers no grounds for complaint, but the quality while being very fair was not generally so fine as last season; several parcels were choice, but quite a few were weak and one or two parcels came to hand too heavily salted for this market and were objected to on that account.



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## EGGS.

Canadian eggs again made their appearance but only to the extent of 590 cases. Prices fluctuated considerably during the season but on the whole eggs have been a scarce commodity. The quality of Canadian imports was satisfactory.

## BACON AND MEATS.

The total of bacon imported is about 100 less than last year. This may be attributed to the lack of shipping facilities during the four week dockers' strike here. Shipments were landed in good order and Canadian bacon continues to receive satisfactory demand, and, provided prices were suitable, larger shipments would be welcome.

*Canned Meats.*—Arrivals under this heading show 409 cases of jellied veal—a slight increase over previous season—which was of a good quality.

*Frozen Meats.*—Show a very decided shrinkage, only 4,196 boxes were landed this year against 10,900 packages last year. Shipments were carried at a temperature of 20° or lower and landed in satisfactory order.

## CANNED APPLES.

A considerably increased import of canned apples is observed, 38,135 cases arriving at Glasgow and about 10,000 at Leith, showing an expansion of about 7,000 cases to Glasgow. The landing condition was generally satisfactory but the tops and bottoms of cases might with advantage be constructed of thicker wood, the same as some of the U.S.A. packages which arrive in better condition for this reason. It is noticeable throughout period of shipments that odd cases are pilfered of one or two tins at some point in transit.

The quality was subject to more severe criticism this year than usual. From what I can learn early shipments have given satisfaction but later arrivals have given rise to several complaints regarding over-softness of fruit, which, in some cases, is breaking down into the liquid. In several of the brands it is obvious that over-ripe fruit was used to make up their cannings as several are complaining of the fruit being brownish red in colour and soft, and it is evident that this year's canning is not so satisfactory as former years.

In addition to the above totals we received 3,114 boxes of Nova Scotian canned apples which were only fair in quality and inclined to be soft, and from Ontario 254 cases of canned corn and 197 of peaches. Fault was found with the quantity in the tins of peaches as a considerable space is found unfilled when opened. Even though the required weight was contained in the cans, which is not admitted, this practice detracts from an appearance of completeness of the package.

## APPLES.

The Canadian apple season of 1911-12 was one of large shipments from Ontario and Nova Scotia, but viewed as a whole the season has been of a disappointing, unprofitable nature to those handling at this end as, with the exception of a few parcels of coloured fall varieties which realized good returns, prices generally were moderate.

The course of prices was dominated in the early season by unusually heavy crops of exceptionally well grown fruit from England which competed with shipments of Ontario summer apples followed by large shipments of Nova Scotia Gravensteins, Kings, Blenheims, &c.

## ONTARIO SHIPMENTS.

Ontario summer apples and early fall varieties were of good size, clean skinned and good colour, and as a rule well graded and arrived in sound condition. The clean appearance of this season's apples is evident testimony to increased care in spraying,



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pruning, &c. General satisfaction was expressed at this period but from the advent of the winter varieties onwards, the dominant note has been one of disappointment on account of their lack of standing power. Climatic conditions during growth negated those qualities in Canadian winter stock which have contributed so much to their popularity in this and other markets. Shipments from the middle of November onwards arrived showing traces of being over-mature and end of November and December arrivals resulted in very serious loss to all who 'stocked' beyond immediate use. Spys, a universal favourite, were conspicuous for scarcity, poor quality, over-ripeness and chipped condition, but all winter varieties were similarly deficient in keeping quality, and though at time of arrival some were in sound order, they did not possess the usual crisp, firm characteristics noticeable in long keeping varieties, but were soft and easily bruised. Retailers state that latest arrivals of Spys, Baldwins, &c., showed material shrinkage and decay every day. These conditions contributed to decreased demand and lower prices. Greenings were of exceptionally fine stock, being clean and bold fruit. Golden Russets on the contrary were poor quality, green and poor size. Baldwins and other winter stock were clean and fair size but these qualities were lost sight of in their non-keeping properties. Several lots of later arrivals were affected by frost, one consignment being almost worthless. Ontario shipments consisted of 153,482 barrels, 103 half barrels and 31,776 boxes. These figures show increases from last year of about 72,000 barrels and 16,446 boxes.

The grading of barrelled stock this year was on the whole fairly satisfactory; occasionally poor parcels opened out, as for instances a number of packers in South Bay district whose grading was farcical, and from the continued shipments of several individuals from the same district it would appear that a united effort to evade the 'Fruits Marks Act' had been agreed upon. The No. 1 grade in many cases was only ordinary and the No. 2 only equal to No. 3.

Boxed apples in common with barrel stock of winter varieties suffered in criticism on account of non keeping condition but were of fair quality and clean. No. 1 grade was of good size in most packs, but No. 2 grades as a rule were under-sized and green for Spy and Baldwin, and the opinion prevails here that there is room for considerable improvement in the quality of pack of the bulk of Canadian boxes.

Box packers would be well advised to pack only fancy and No. 1 grades and to ship No. 2 grades in barrels, as the box trade is really a fancy trade. Frequently I saw No. 2 boxes realize only equivalent prices to No. 2 barrels, and on several occasions not so high, and if the choicer fruit was relieved of the competition from these lower grade boxes, higher prices would be secured. Some of the later arrivals of boxed Greenings and Baldwins were in a very decayed condition.

## NOVA SCOTIA SHIPMENTS.

Nova Scotia contributed a record quantity to the Glasgow market, viz.: 153,219 barrels and 3,394 boxes. Such heavy consignments from this quarter coupled with the quantities from Ontario created an over-loaded market with declining prices.

The early arrivals—Gravensteins—were clean, fair colour and size, and landed in good order, except in the case of one steamer delayed on the way. Later arrivals of Kings, Blenheims, etc., were generally of excellent quality, the Kings taking the place created by the scarcity of this variety from Ontario, and on this account were decidedly more popular than in years of normal supply from the latter province. Winter varieties suffered in common with apples from other quarters because they would not keep. Baldwins as usual were smaller than those from other sources. Fallawaters were a feature being choice, clean and large fruit. In Scotland Nova Scotian apples generally (except Gravensteins) are considered of secondary quality to Ontario apples and except when the latter are very scarce are unlikely to bring so much money. This



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condition is influenced by the firm character of the apples and their woodiness of flavour, also by the unpopularity of the barrel due to its rough appearance, small size and difficulty in opening and closing without damage.

It has been alleged that Nova Scotian fruit was overpressed this season but from inquiries I can only find a few odd complaints, and these referred to Kings, the majority expressing satisfaction with the improvement in landing condition compared with a few years ago.

*Boxes.*—The bulk of the boxes were of the 'Hillcrest Orchards' brand, the Gravensteins being of choice quality in size and colour. King's were likewise good; Wageners good but did not keep. This package could be profitably utilized for larger shipments of choice graded Gravensteins from Nova Scotia. A shipment of another brand (Waterville Fruit Growers) arrived but they were of poor size and quality and realized corresponding prices.

#### *British Columbia Fruit.*

Imports from this quarter consisted of 2,407 boxes apples and 648 boxes pears, showing an expansion over last year. Red varieties of apples were irregular and inferior in quality and grade to last season. The outstanding variety was Newtown Pippins which were of satisfactory size and choice quality; but Jonathans were poor, McIntosh Red irregular in size and deficient in colour, Cox's Orange inferior and Spys poor both in colour and size. The condition of arrivals was satisfactory. The pears also arrived in sound condition except Lawrence variety which were over-ripe.

#### ONTARIO PEARS.

The quantity of pears imported from Ontario shows a large falling off from previous season, there being only 3,764 cases and 62 half barrels in cold storage and 27 barrels in ordinary storage, the bulk of the latter being in poor condition, decided decay showing. The case is the most suitable package for this fruit.

The pears generally were of fair quality and Bartletts made very satisfactory prices. The bulk of arrivals came to hand in sound order and very much larger quantities could be successfully distributed from Glasgow.

#### *General Remarks.*

I have to report some improvement in facilities at Glasgow for marketing apples, the Corporation having built a saleroom which is used by a few firms who are not members of the Central Commercial Saleroom, so that all apples arriving here are now sold under the collective system of auctioning, which tends to a higher level of prices than under the old system of individual sales proceeding simultaneously. Transport facilities are on the usual lines of former years except for an addition to the Allan line fleet between this port and Montreal, viz. SS. *Scotian*. This steamer, in addition to extensive passenger accommodation, has large cargo and refrigerator space. As previously indicated discharging operations were conducted by dock labourers in a more careless manner on account of the continued spirit of unrest but with the termination of the strike a better feeling prevails and it is hoped the men will be more amenable to the desires of foremen and exercise greater care in discharging perishable cargo.

JAS. A. FINDLAY.



## SESSIONAL PAPER No. 15a

## REPORT OF THE BRISTOL CARGO INSPECTOR (CAPT. H. E. SHALLIS).

BRISTOL, March 31, 1912.

The imports to the Port of Bristol the last year have been very satisfactory throughout, all products, with one or two exceptions, showing a good increase on the previous year.

## CHEESE.

Of cheese we have received about 390,000 boxes, a decrease of about 48,000 boxes from last year due to seasonable conditions. The merchants report that they are without any great cause for complaint in the way of heated cheese during the excessively hot weather, or of green cheese coming to hand in the fall. Instances have occurred of defects from both causes, the immature cheese being chiefly from the Quebec districts, but this year has shown a decided improvement in this latter respect and also in regard to the question of weights. In the early part of the year there seemed good prospects for the new season, but a little later the merchants were disturbed by the announcement of the Reciprocity Treaty, and they therefore withheld from buying just at a time when they usually enter into contracts with wholesale and retail dealers. On top of this came the exceptional drought which lasted so long and from which the English make suffered heavily, falling off from one-half to two-thirds. This resulted in big jumps in prices from about 54 shillings early in July to 60 shillings and 64 shillings in August, and from 68 shillings to 73 shillings in September for Canadian make, while English ranged from 80 shillings to 100 shillings. In November Canadian prices ruled lower, but the English prices still remain high and appear likely to for some time yet.

*Boxes.*—One matter may be improved upon, that is for the shippers to be more particular in the marking of the boxes. One of the steamship lines alone reckon that they have carried over 1,500 boxes this past year without any shipping marks, and at times great difficulty is experienced in disposing of these unmarked cheese.

*Breakages.*—It is to be regretted that in the matter of broken boxes we do not seem to make the slightest improvement, in fact, if anything this past year the results are worse. In the first place the wood is thin and brittle and the boxes are roughly fastened together, the lids are made up in either three, four or five pieces, and the rim around same often insecurely nailed. With these original defects they are unable to withstand the continuous handling from the factory to destination. Boxes from the western districts are much better than those from the east and they land in better condition although the cheese in them are usually heavier. Some factories still persist in placing cheese in any sort of box irrespective of its size so long as they can get it in, and we have numerous instances of cheese being either too small or too large for the box, which causes breakage. Unfortunately of late in addition to the many other difficulties we have to contend with may be added an increasing carelessness on the part of the men in handling the boxes, attributable to the labour unrest; increasing instances have this year been particularly noticeable and to check a docker for rough handling or damage to a package is often rewarded by abuse. The unloading of boxes by mechanical appliances has been considered, but unfortunately at Bristol we are handicapped from using any up-to-date methods as our shipments are all of irregular quantities, causing at the same time an irregular system of stowage, and this is where London has the advantage in handling the cargoes, the ships carrying large quantities each trip. From my own observations and many opinions I have received from dock



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and steamship officials, stevedores and provision merchants, the first remedy should start at the factories in the way of strong, well made, well fitting boxes (or crates similar to the New Zealand package), capable of withstanding the constant handling; then a better system of delivering the shipments and loading the same, in which the shippers and shipping firms could materially assist, and if the loading and unloading could be done by mechanical means in preference to the constant handling less damage would occur with a welcome decrease in the costs of repair all round.

## BUTTER.

We have received in all about 60,000 boxes, a considerable increase on the past four years, which arrived here in first class condition. One or two merchants are of opinion that the quality altogether has not been up to usual standard, but on the other hand others speak most favourably of their consignments. The butter business also was affected by the widespread drought, and prices if anything are relatively higher than for cheese. All shipments came along in refrigerator chambers and on being landed were hurried forward, especially in the hottest weather, to the cool chambers either at the docks or the depots of the respective merchants in town. With very few exceptions none of the boxes sent forward this year were sacked.

## MEATS.

Our imports of Canadian bacon amounted to 3,700 boxes, showing a substantial increase over last year. The bulk was sent forward to London, though quantities were retained here. The condition of the meat was excellent and much appreciated. The boxes were good, though none too strong, and a band around the centre would be an improvement. Nearly the whole of the shipments were carried by the Royal Line, which steamers being speedy are well suited for the carriage of these mild cured meats to be landed here for early consumption.

## EGGS.

We received 200 cases only from Canada and this trade appears entirely lost, our imports being from Ireland and the continent.

## PEACHES.

In the latter end of September we received a consignment of 1,716 boxes of peaches. The fruit arrived here in the best of condition, the temperature having been well maintained on the steamer. With the exception of a small quantity retained here in Bristol, they were sent through to London, leaving the dock in ample time for the market the following morning, but owing to some mistake on the part of the railway they did not reach their destination till mid-day, losing the market and finally not fetching the prices they otherwise would have done, only realizing 3 to 4 shillings per box. The peaches which were sold in Bristol realized 4 shillings, 6 pence per box. There is a good opening for this trade and it is to be hoped that the unfortunate incident of last year will not deter further shipments. Opinions are still expressed that the above price is high and that nothing over 4 shillings a box would call for a big demand.

## HAY.

In dealing with this article it may be mentioned that though a trade has been kept up for some years, our imports as a rule are not large, supplies coming chiefly from the surrounding counties, but this year owing to the long summer and drought a big call has had to be made from abroad, Canada being the chief supplier. Prices have ruled high, the freight alone, at the time of the biggest demand, say end of



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September and beginning of October, running from 37/6 to 40 shillings per ton from place of shipment. There are no storages for hay in Bristol so shipments have to be in small quantities, say 100 to 200 tons per ship, to insure quick disposal. The quality mostly in demand here is 'Clover Mixed.'

## APPLES.

This year we have had a big increase, our totals amounting to about 42,000 barrels, the bulk of which were from Nova Scotia. The varieties have been less in number than usual and were chiefly Baldwins, Spies, Ben Davis and Golden Russets. While the early shipments came along in very good style, one or two of the later ones were more or less affected by the frost, but taking it all round good prices have been realized, especially in the case of Golden Russets which have been good all through and sold at 21 to 22 shillings per barrel. The imports from Ontario, which were smaller than usual, were all sent through to South Wales and from reports received were of a very satisfactory nature and fetched good prices. The majority of the Nova Scotian apples also went through to Cardiff, but it is intended next season to hold the sales at Avonmouth, and so make that port the distributing centre, which will prove a big saving to the merchants. There has been no instance this year of 'falsely marked' barrels, but a number of instances where the grading has not been all that could be desired. It was gratifying to note that in the past two years the apples shipped here show a considerable improvement in quality, for at one time it looked as if the trade would fall off at this port owing to so many inferior shipments, but now a well maintained quality will tend to good results, as already I learn of merchants making preparation for increasing their business next year. Some of our English growers are waking up and taking a keen interest in the apple growing industry which has greatly fallen off for years past, and in this district and surrounding counties they have a good field for their work, but it is not expected that it will affect our Canadian imports.

*Thermographs and Cooled Air Chambers.*

As in previous years thermographs were placed on board all the steamers during the season, in refrigerators, cool air chambers and holds, and all showed good working results, the temperatures having been well maintained. This year has especially shown the great benefit derived from cool air chambers for it may be said that owing to the great heat on both sides of the Atlantic they proved the salvation of many lots of cheese that would otherwise have suffered considerably.

*Acknowledgments.*

I again thank all the officials of the various firms who have dealings with the Canadian trade and with whom I am frequently in converse for their courtesy at all times and for expressions of opinion on any matter for the benefit of the trade.

H. E. SHALLIS.

## REPORT OF THE LONDON CARGO INSPECTOR (MR. THOS. E. DAVIS).

LONDON, March 31, 1912.

Herewith I beg to submit my annual report on the Department's work at the Port of London and district for the year ending March 31, 1912.

## GENERAL ROUTINE OF WORK.

My chief duties involved strict attention to the manner of stowage and discharge of cargoes and the despatch and handling of same during subsequent delivery to warehouses, rail, or merchants.



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In the matter of stowage, the main point of inspection has been directed to the proper dunnage of commodities, and seeing that the best facilities are employed to assure adequate ventilation for ordinary stowage and standard temperatures in cooled air and refrigerator chambers. In respect to the latter, the thermographs placed in chambers have been of material help and guidance.

## FREIGHTS.

During the past season my reports have covered the arrival of 130 vessels, and the inspection of cheese, bacon, butter, eggs, peaches and apples.

In connection with the above it has been necessary to follow goods to railway depots, warehouses, markets and merchants within a reasonable area from my centre before making an individual report on the out-turn of each steamer.

## CHEESE.

From inquiries and information received from the principal merchants, the shipments of Canadian cheese received show an improvement both in condition and quality compared with a few years back. From reports received the quality of the various factories has been more regular, and there has been a conspicuous absence of discoloured and mixed curd as was occasionally experienced before the amendment of the Act.

The shipping of green cheese is condemned, resulting as it does in shrinkage and material loss. Complaints from time to time are to hand of indistinct marking of weights on boxes leading to vexatious mistakes, and it is the general opinion that it should be compulsory to have weights stencilled clearly on every box with date of make.

## CHEESE AND BUTTER TRANSIT.

It is an acknowledged fact that the facilities for handling cheese at the docks here are such that the percentage of broken boxes is brought to a minimum, but in regard to consignments placed on rail for the provinces, the slack handling of packages has repeatedly given me cause to lodge complaints with the several railway companies, with satisfactory results. Two years ago many parcels went away in low trucks with tarpaulin covers as the only protection against the sun. Now, box trucks are used, affording better stowage, and although the percentage of broken boxes is very high after rail transit, the breakage is due mainly to shunting.

## BUTTER.

The shipments of Canadian butter to this port in 1911 were greater than for four years past. The boxes came unsacked but the worst fault is the lack of uniformity in the package. A fifty-six pounds net package is recommended.

## BACON AND EGGS.

The ocean carriage and condition on arrival has given every satisfaction.

## APPLES.

Ontario apples were limited to a few hundred lots, but the totals from Nova Scotia surpass all records. Much trouble has been experienced through the over-ripeness of coloured varieties; and with strike troubles provincial orders have been limited, although the actual London demand has been well maintained. Another feature was the large number of transhipments for the continent compared with those of last season.



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## ENGLISH APPLE-GROWING ACREAGE.

From the compiled tables it will be seen (Table I) that the acreage under apples in Great Britain tends on the whole to decrease rather than increase. Table II shows that it is chiefly in the cider counties of Worcester, Gloucester, Somerset and Devon, that the decrease is taking place. This is probably due to the gradual elimination of the old and worn out orchards that were planted so extensively about sixty years ago. Middlesex also shows a marked decrease in 1911, but this is doubtless attributable to the extension of the residential districts around London.

Hereford alone of the cider counties shows an increase, but from a report which the Board of Agriculture has received from one of their inspectors, it appears likely in Worcester also an increase will be recorded in the near future. A report on the position in the Isle of Ely district of Cambridgeshire indicates that an increase in the acreage under apples is taking place, more particularly in the outlying parishes. This is also the case in Worcestershire, and it is officially stated that the increased acreage is chiefly in the hands of the newer and better educated type of grower.

TABLE I.

Acreage under Apples in Great Britain, 1907-1911.

| Year.     | England.              | Wales.              | Scotland.         | Great. Britain        |
|-----------|-----------------------|---------------------|-------------------|-----------------------|
|           | Acres.                | Acres.              | Acres.            | Acres.                |
| 1907..... | 168,575 $\frac{3}{4}$ | 3,114 $\frac{3}{4}$ | 952 $\frac{1}{2}$ | 172,643               |
| 1908..... | 168,762 $\frac{1}{4}$ | 3,087 $\frac{3}{4}$ | 901 $\frac{1}{2}$ | 172,751 $\frac{1}{2}$ |
| 1909..... | 169,296 $\frac{3}{4}$ | 3,023 $\frac{1}{4}$ | 847 $\frac{1}{4}$ | 1761,371              |
| 1910..... | 168,302 $\frac{1}{2}$ | 2,932 $\frac{1}{2}$ | 795 $\frac{1}{2}$ | 172,030 $\frac{1}{2}$ |
| 1911..... | 166,522 $\frac{3}{4}$ | 2,841 $\frac{3}{4}$ | 789 $\frac{3}{4}$ | 170,154 $\frac{1}{4}$ |

TABLE II.

Acreage under Apples in Certain Counties, 1907-1911.

| Year.     | Hereford.            | Worcester.           | Gloucester.          | Somerset.            | Devon.               | Kent.                | Middlesex.          | Cambridge           |
|-----------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|
|           | Acres.               | Acres.               | Acres.               | Acres.               | Acres.               | Acres.               | Acres.              | Acres.              |
| 1907..... | 24,196 $\frac{3}{4}$ | 12,601 $\frac{1}{4}$ | 13,412 $\frac{1}{2}$ | 25,231               | 26,984 $\frac{1}{4}$ | 12,394 $\frac{3}{4}$ | 963 $\frac{2}{4}$   | 1,761               |
| 1908..... | 24,448 $\frac{1}{2}$ | 12,931 $\frac{1}{2}$ | 13,086 $\frac{1}{4}$ | 25,080               | 26,575 $\frac{1}{4}$ | 13,089 $\frac{1}{4}$ | 1,028               | 1,921 $\frac{1}{4}$ |
| 1909..... | 24,828 $\frac{1}{4}$ | 13,486               | 13,311 $\frac{1}{2}$ | 24,950 $\frac{1}{4}$ | 26,567 $\frac{1}{2}$ | 12,850               | 1,063 $\frac{1}{4}$ | 2,253 $\frac{1}{4}$ |
| 1910..... | 24,830 $\frac{1}{2}$ | 13,600 $\frac{1}{4}$ | 12,789 $\frac{1}{2}$ | 24,765               | 26,453               | 13,358 $\frac{3}{4}$ | 1,114 $\frac{1}{2}$ | 2,345 $\frac{3}{4}$ |
| 1911..... | 24,975 $\frac{1}{2}$ | 13,280 $\frac{1}{4}$ | 12,753 $\frac{1}{2}$ | 24,107 $\frac{3}{4}$ | 26,071               | 13,733 $\frac{1}{2}$ | 844                 | 2,416 $\frac{3}{4}$ |

*Acknowledgments.*

I am much indebted to shipping companies, merchants and officials of the Board of Agriculture for useful help during the year.

THOMAS E. DAVIS.



## THE BUTTER TRADE.

On this continent and in Europe the summer of 1911 was characterized by excessive heat and prolonged drought which naturally lessened the production of milk and made high prices for dairy products during the season of non production inevitable. As soon as the disastrous effect of the abnormal weather conditions began to be realized the price of butter in the world's greatest market—the United Kingdom—began to advance and soon became sufficiently attractive to draw regular shipments from Canada and from the United States. By the autumn it was apparent that the general world supply of butter was very short and prices began to soar. On January 1st the American Warehousemen's Association reported that the quantity of butter stored in thirty-eight cold storage warehouses in the United States was 18,639,100 pounds compared with 45,316,800 pounds one year previous, and such a tremendous shrinkage in the stocks of stored butter naturally caused a firmer market. In New York one advance followed another in quick succession until January 17th when the record figure of 42 cents was reached for creamery specials. In Montreal the top wholesale price reported was 36 cents which was quoted on February 7. The range of prices throughout the twelve months was probably unprecedented. In May specials sold in New York for 22 cents and for 42 cents in January. In Montreal best creamery sold for 20½ cents in May and for 36 cents in February.

In the twelve months ended February, 1912, Canada and the United States combined exported 8,068 tons of butter and imported 1,864 tons, showing an excess of exports over imports of 6,204 tons. In the previous year the combined exports were 3,444 tons and imports 1,017 tons showing an excess of 2,427 tons exported. Turning to the United Kingdom, the greatest butter importing country in the world, we find that her imports in the same two yearly periods were as follows: In 1911-12, 238,108 tons and in 1910-11, 248,511 tons, showing a decrease in the past twelve months of more than ten thousand tons, notwithstanding the increased quantity received from North America. From these statistics it is evident that the high prices that prevailed in this country and the United States during the winter months were not caused by any shortage in home production because, as shown above, both countries had a surplus, but that they were the result of a deficiency in the other butter exporting countries and the consequent creation of a world wide demand which was not satisfied until prices everywhere had risen to a point where the consumption of butter was sufficiently curtailed to equalize supply and demand once more and thus automatically prevent any further rise in values.

The high cost of butter in the United States was, of course, a fine thing for the manufacture of oleomargarine and stimulated its production wonderfully. For instance, in the month of February the Chicago district produced 7,892,659 pounds and in March 6,725,011 pounds. Of the latter quantity 229,051 pounds were coloured and paid the tax of ten cents per pound.

### *Butter Transportation.*

The special refrigerator car services for the carriage of butter to Montreal and Toronto, which are arranged for by this Branch, were again in operation from May 16th to October 13th, and this division maintained the usual supervision of the cars both at country shipping points and at the terminals in Montreal and Toronto.

Our agreement with the railway companies provides that the Department shall guarantee a certain amount of earnings each time a car is run over a route, and that



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when the total revenue earned by one of these cars falls short of the amount of the guarantee, the deficit shall be made good by the Department. Under this plan shippers may forward any quantity regularly each week for which they pay only the less-than-carload freight rate and their butter is carried at a temperature which protects it from deterioration.

Last season four new routes were established on the Grand Trunk Railway in Ontario with a common terminus in Toronto, namely, from St. Thomas, from Dunnville, from Orillia and from Kinmount Junction. One new service was also started in Quebec, namely, from Matapedia to Montreal via the Intercolonial Railway.

During the past few years the cost to the Department of maintaining these services has been decreasing owing to the larger quantity of butter carried.

The total number of cars with butter which were inspected at Montreal in the season of 1911 was 1,106 as follows: At Grand Trunk railway terminals 555, at Canadian Pacific railway terminals 447, and at Canadian Northern Quebec railway terminals 104. These cars delivered a total of 347,828 packages weighing over twenty-two million pounds. The average temperature of the butter when unloaded from the cars was 55° and the average quantity of ice in the bunkers was approximately 1,000 pounds per car.



TEMPERATURES OF QUEBEC AND ONTARIO BUTTER AT COUNTRY SHIPPING POINTS, AT MONTREAL AND  
AT LANDING PORTS IN GREAT BRITAIN.

Average Temperatures of Creamery Butter at Shipping Points in the Province of Quebec for seven years, 1905 to 1911 inclusive.  
J. N. Lemieux, Inspector.

| Name of Proprietor<br>or<br>Manager. | Post Office Address.    | County.            | Marks.          | Railway Shipping<br>Station. | Railway.      | YEARS. |       |       |       |       |       |       |
|--------------------------------------|-------------------------|--------------------|-----------------|------------------------------|---------------|--------|-------|-------|-------|-------|-------|-------|
|                                      |                         |                    |                 |                              |               | 1911.  | 1910. | 1909. | 1908. | 1907. | 1906. | 1905. |
| J. L. Côté.....                      | St. Guillaume Station.  | Yamaska.....       | WP 4.....       | St. Guillaume.....           | C.P.R.....    | 41.5   | 48.4  | 41.0  | 48.4  | 49.5  | ..... | 50.3  |
| Jos. B. Grenier.....                 | Ste. Rosalie.....       | Bagot.....         | Iris.....       | Ste. Rosalie.....            | C.P.R.....    | 41.5   | 52.5  | 47.8  | 48.4  | 49.5  | ..... | ..... |
| C. E. Duquette.....                  | St. Hyacinthe.....      | St. Hyacinthe..... | BC 23.....      | St. Hyacinthe.....           | G.T.R.....    | 42.0   | 51.6  | 51.5  | 58.5  | ..... | ..... | 63.0  |
| Forget & Parthenais.....             | Ste. Anne des Plaines.  | Terrebonne.....    | FP 1.....       | Bruchesi.....                | C.P.R.....    | 43.0   | 46.0  | 44.4  | 47.0  | 50.0  | 49.0  | ..... |
| C. E. Lamarche.....                  | St. Esprit.....         | Montcalm.....      | HBR 49.....     | Ste. Julienne.....           | C.N.Q.R.....  | 43.0   | 42.2  | 41.0  | 57.4  | ..... | ..... | ..... |
| J. B. Auctil.....                    | Matane.....             | Matane.....        | Reg. 1221.....  | Matane.....                  | C.&G.T.R..... | 43.0   | 52.3  | 51.2  | 48.0  | 50.0  | ..... | ..... |
| Louis Levesque.....                  | Cacouna.....            | Témiscouata.....   | R 86.....       | Cacouna.....                 | I.C.R.....    | 43.0   | 45.0  | 48.5  | 48.2  | ..... | ..... | ..... |
| Pierre Proulx.....                   | Ste. Agathe.....        | Lotbinière.....    | 201.....        | Methot's Mill.....           | G.T.R.....    | 44.3   | 44.1  | 42.1  | 43.1  | 42.8  | ..... | ..... |
| F. Provost.....                      | Acton Vale.....         | Bagot.....         | F 62.....       | Acton.....                   | G.T.R.....    | 44.3   | 55.6  | 51.8  | 59.3  | 56.9  | ..... | ..... |
| Charles Bouchard.....                | St. Denis.....          | Kamouraska.....    | K 13.....       | St. Philippe de Néri.....    | I.C.R.....    | 44.5   | ..... | ..... | ..... | ..... | ..... | ..... |
| Léon Chouinard.....                  | St. Paschal.....        | ".....             | NX.....         | St. Paschal.....             | I.C.R.....    | 44.6   | ..... | ..... | ..... | ..... | ..... | ..... |
| J. Ross.....                         | Anqui.....              | Matane.....        | IR.....         | Anqui.....                   | I.C.R.....    | 45.0   | ..... | ..... | ..... | ..... | ..... | ..... |
| Neideler & Frère.....                | St. Germain de G.....   | Drummond.....      | P 2.....        | St. Germain.....             | I.C.R.....    | 45.0   | ..... | 45.4  | 59.0  | 49.0  | ..... | ..... |
| J. E. Petit.....                     | Gentilly.....           | Nicolet.....       | A 587.....      | Gentilly.....                | Q.M.&S.....   | 45.7   | ..... | ..... | ..... | ..... | ..... | ..... |
| Elisée Dumas.....                    | St. Euphrasie.....      | Témiscouata.....   | ED.....         | St. Arsène.....              | I.C.R.....    | 45.7   | 44.7  | 45.7  | 45.4  | 47.7  | 55.3  | ..... |
| W. Gareau.....                       | St. Jérôme.....         | Terrebonne.....    | WG.....         | St. Jérôme.....              | C.P.R.....    | 46.2   | 47.3  | 58.3  | 46.9  | 50.5  | 50.0  | ..... |
| Léon Thériault.....                  | Isle Verte.....         | Témiscouata.....   | No. 465.....    | Isle Verte.....              | I.C.R.....    | 46.5   | 46.1  | 46.3  | 46.7  | 43.4  | 42.2  | ..... |
| Ludger Caron.....                    | Jersey Mills.....       | Beauce.....        | H&H 379.....    | St. Georges.....             | Q.C.R.....    | 47.3   | 64.0  | ..... | ..... | ..... | ..... | ..... |
| J. H. Chaise.....                    | Mont Laurier.....       | Labelle.....       | Mt Laurier..... | Mont Laurier.....            | C.P.R.....    | 47.3   | ..... | ..... | ..... | ..... | ..... | ..... |
| Syndicat Ste. Hénédine.....          | Ste. Hénédine.....      | Dorchester.....    | Reg. 372.....   | Ste. Hénédine.....           | Q.C.R.....    | 47.4   | 52.3  | ..... | ..... | ..... | ..... | ..... |
| J. I. Alain.....                     | Ste. Anne de la Pêrade. | Champlain.....     | Cap No. 6.....  | La Parade.....               | C.P.R.....    | 47.6   | 49.3  | 47.9  | 53.3  | ..... | ..... | ..... |
| J. A. McCallum.....                  | Danville.....           | Richmond.....      | 825.....        | Danville.....                | G.T.R.....    | 47.8   | 41.0  | 40.2  | 44.9  | 53.8  | 40.1  | 41.2  |
| A. A. Nicolle.....                   | St. Simon.....          | Rimouski.....      | N.....          | St. Simon.....               | I.C.R.....    | 47.8   | 49.6  | 48.1  | 50.6  | 48.8  | ..... | ..... |
| Revd. Mr. Noel.....                  | St. Cyprien.....        | Témiscouata.....   | 6.....          | St. Eloi.....                | I.C.R.....    | 48.0   | 49.6  | 54.3  | 53.6  | 59.0  | ..... | ..... |
| C. Nadeau.....                       | St. Isidore.....        | Dorchester.....    | F&C 11.....     | Ste. Hénédine.....           | Q.C.R.....    | 48.4   | 45.4  | ..... | ..... | ..... | ..... | ..... |
| A. Genois.....                       | St. Raymond.....        | Portneuf.....      | Reg. 500.....   | St. Raymond.....             | Q.S.&I.R..... | 48.5   | 39.2  | ..... | ..... | ..... | ..... | ..... |
| Ernest Lemaire.....                  | St. Bonaventure.....    | Yamaska.....       | WP 5.....       | St. Guillaume.....           | C.P.R.....    | 48.5   | ..... | ..... | 52.5  | ..... | ..... | ..... |
| Israel Dion.....                     | La Chapelle.....        | Two Mountains..... | ID.....         | Papineau.....                | C.N.Q.R.....  | 49.0   | 44.3  | 52.4  | 46.3  | 52.5  | ..... | ..... |
| N. Rocheleau.....                    | St. Gabrielle de B..... | Berthier.....      | A 603.....      | St. Gabriel.....             | C.P.R.....    | 49.0   | 52.8  | 54.5  | ..... | ..... | ..... | ..... |



|                           |                           |                    |                              |                           |           |      |
|---------------------------|---------------------------|--------------------|------------------------------|---------------------------|-----------|------|
| Louis Archambault.        | Lachevrotière             | Portneuf.....      | LA 5.....                    | Deschambault.             | C.N.Q.R.. | 49 0 |
| Syndicat St. Isidore.     | Coulombe.....             | Dorchester.....    | Reg. 498.....                | Ste. Hénédine.            | Q.C.R..   | 49 0 |
| Joseph Bourque.....       | St. François.....         | Beauce.....        | AMc 20.....                  | St. Georges.....          | Q.C.R..   | 49 2 |
| O. Bernier.....           | Sault St. Lin.....        | L'Assomption.....  | Reg. 474.....                | St. Lin.....              | C.P.R..   | 49 3 |
| Charles Harvey.....       | Anqui.....                | Matane.....        | Aver 8.....                  | Anqui.....                | I.C.R..   | 49 4 |
| I. Dumas.....             | St. Jean de Dieu.....     | Témiscouata.....   | JD.....                      | Trois Pistoles.....       | I.C.R..   | 49 4 |
| Eugène Godbout.....       | St. Eloi.....             | ".....             | Rose Hill 19.....            | St. Eloi.....             | I.C.R..   | 49 4 |
| E. R. Pepin.....          | St. Basile.....           | Portneuf.....      | Reg. 86.....                 | St. Basile.....           | C.P.R..   | 49 4 |
| J. C. Rioux.....          | Mont Joli.....            | Rimouski.....      | I.C.R..                      | Ste. Flavie.....          | I.C.R..   | 49 5 |
| Joseph Beaudoin.....      | Cabane Ronde.....         | L'Assomption.....  | J.B.....                     | Cabane Ronde.....         | C.P.R..   | 49 5 |
| Syndicat St. Bernard..... | St. Bernard.....          | Dorchester.....    | CP 73.....                   | Scotts.....               | Q.C.R..   | 49 5 |
| Auguste Breton.....       | St. Epiphane.....         | Témiscouata.....   | BC.....                      | St. Arsène.....           | I.C.R..   | 49 7 |
| F. Caron.....             | St. Jean Port Joli.....   | L'Islet.....       | 116.....                     | St. Jean Port Joli.....   | I.C.R..   | 49 7 |
| J. P. Charpentier.....    | L'Avenir.....             | Drummond.....      | Canada ex-<br>tras 12.....   | Drummondville.....        | I.C.R..   | 49 7 |
| J. A. Sainden.....        | St. Arsène.....           | Témiscouata.....   | JAS.....                     | St. Arsène.....           | I.C.R..   | 50 0 |
| D. Pelletier.....         | Acton Vale.....           | Bagot.....         | 956.....                     | Acton.....                | G.T.R..   | 50 0 |
| T. St. Georges.....       | Kildare.....              | Joliette.....      | HBR 25.....                  | Joliette.....             | C.N.Q.R.. | 50 0 |
| W. Rioux.....             | Cedar Hall.....           | Matane.....        | CH.....                      | Cedar Hall.....           | I.C.R..   | 50 0 |
| Wilfrid St. Georges.....  | St. Jean de Matha.....    | Joliette.....      | HBR 80.....                  | St. Félix de Valois.....  | C.P.R..   | 50 0 |
| Arcade Pagé.....          | Côte Fortier.....         | Two Mountains..... | G 129.....                   | Ste. Scholastique.....    | C.P.R..   | 50 0 |
| A. Dandonneau.....        | St. Damien.....           | Berthier.....      | OD&S 1.....                  | St. Gabriel.....          | C.P.R..   | 50 2 |
| D. McCarthy.....          | Ulverton.....             | Drummond.....      | H 53.....                    | Lisgar.....               | G.T.R..   | 50 2 |
| Syndicat St. Paschal..... | St. Paschal.....          | Kamouraska.....    | XXX.....                     | St. Paschal.....          | I.C.R..   | 50 3 |
| Chas. Eug. Apoil.....     | Green River.....          | Témiscouata.....   | 339.....                     | Riv. du Loup.....         | I.C.R..   | 50 5 |
| L. A. Boucher.....        | L'Islet.....              | L'Islet.....       | LAB 445.....                 | L'Islet.....              | I.C.R..   | 50 5 |
| Alp. Mercier.....         | St. Patrice.....          | Lotbinière.....    | FR 57.....                   | St. Agapit.....           | G.T.R..   | 50 5 |
| Philippe Roussel.....     | Isle Verte.....           | Témiscouata.....   | R 18.....                    | Isle Verte.....           | I.C.R..   | 50 6 |
| François Roy.....         | N.D. du Mont Carmel.....  | Kamouraska.....    | K 12.....                    | St. Philippe de Néri..... | I.C.R..   | 50 7 |
| Naz. Demers.....          | St. Giles.....            | Lotbinière.....    | Naz. Demers.....             | St. Agapit.....           | G.T.R..   | 50 7 |
| Joseph Fontaine.....      | St. Anselme.....          | Dorchester.....    | JL 464.....                  | St. Anselme.....          | Q.C.R..   | 50 7 |
| D. Laurin.....            | St. Janvier.....          | Terrebonne.....    | St. J.....                   | St. Janvier.....          | C.P.R..   | 50 8 |
| Syndicat Ste. Marguerite. | Ste. Marguerite.....      | Dorchester.....    | Canadian<br>Verbenas 15..... | St. Hénédine.....         | Q.C.R..   | 51 0 |
| Cyris Godbout.....        | St. Eloi.....             | Témiscouata.....   | B.....                       | St. Eloi.....             | I.C.R..   | 51 2 |
| H. Lecompte.....          | St. Théodore d'Acton..... | Bagot.....         | Rose 3.....                  | Acton.....                | G.T.R..   | 51 2 |
| D. Kerouack.....          | St. Narcisse.....         | Lotbinière.....    | FR 71.....                   | St. Agapit.....           | G.T.R..   | 51 2 |
| Philibert Gauthier.....   | St. Luc.....              | Matane.....        | R 36.....                    | Matane.....               | C.&G.T.R. | 51 3 |
| Euclide Phaneuf.....      | Rapide L'Orignal.....     | Labelle.....       | D 21.....                    | Mont Laurier.....         | C.P.R..   | 51 3 |
| Rev. J. A. Gagné.....     | Maria.....                | Bonaventure.....   | G 850.....                   | Maria.....                | Q.O.R..   | 51 4 |
| Isidore Jodoin.....       | St. Théodore d'Acton..... | Bagot.....         | Hillcrest<br>1340.....       | Acton.....                | G.T.R..   | 51 5 |
| A. S. Deslandes.....      | St. Valerien.....         | Shefford.....      | Deslandes.....               | St. Liboire.....          | G.T.R..   | 51 5 |
| C. Laviolette.....        | Cadot.....                | Montcalm.....      | H M 6.....                   | St. Julienne.....         | C.N.Q.R.. | 51 6 |
| Alex. Gouin.....          | St. Felix de Kingsey..... | Drummond.....      | Canada A.....                | Richmond.....             | G.T.R..   | 51 6 |
| J. E. Larose.....         | St. Lin.....              | L'Assomption.....  | HBR 42.....                  | St. Lin.....              | C.P.R..   | 51 6 |
| Alexis Coté.....          | Trois Pistoles.....       | Témiscouata.....   | 3.....                       | Trois Pistoles.....       | I.C.R..   | 51 6 |
| Cyris Godbout.....        | St. Eloi.....             | Témiscouata.....   | HBR.....                     | Isle Verte.....           | I.C.R..   | 51 6 |
| C. Eug. Michaud.....      | Isle Verte.....           | Témiscouata.....   | Reg 381.....                 | Isle Verte.....           | I.C.R..   | 51 6 |
| Jos. Shaw.....            | Shawbridge.....           | Terrebonne.....    | G L.....                     | Shawbridge.....           | C.P.R..   | 52 0 |



Average Temperature of Creamery Butter at Shipping Points in the Province of Quebec for seven years 1905 to 1911 inclusive:  
J. N. Lemieux, Inspector—Continued.

| Name of Proprietor<br>or<br>Manager. | Post Office Address.                | County.            | Marks.                 | Railway Shipping<br>Station. | Railway.           | YEARS. |       |       |       |       |       |       |
|--------------------------------------|-------------------------------------|--------------------|------------------------|------------------------------|--------------------|--------|-------|-------|-------|-------|-------|-------|
|                                      |                                     |                    |                        |                              |                    | 1911.  | 1910. | 1909. | 1908. | 1907. | 1906. | 1905. |
|                                      |                                     |                    |                        |                              |                    | Deg.   | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  |
| A. Houle.....                        | St. Simon.....                      | Bagot.....         | Peerless 2.....        | St. Simon.....               | C. P. R. ....      | 52.0   | 57.6  | 57.0  | 61.2  | 50.0  | 55.0  | ..... |
| J. E. Doucet .....                   | St. Léonard .....                   | Nicolet.....       | JED 2.....             | St. Léonard Jet .....        | I. C. R. ....      | 52.0   | ..... | ..... | ..... | ..... | ..... | ..... |
| Eugène Roy.....                      | St. Clément .....                   | Temiscouata .....  | ER.....                | St. Eloi.....                | I. C. R. ....      | 52.1   | 44.7  | 46.4  | 50.9  | 50.3  | ..... | ..... |
| J. Emile Pelletier.....              | Bolduc.....                         | Beauce.....        | V 37.....              | St. Georges.....             | Q. C. R. ....      | 52.3   | 53.6  | ..... | ..... | ..... | ..... | ..... |
| Geo. Bennett .....                   | New Glasgow .....                   | Terrebonne.....    | Green Bank.....        | Paisley.....                 | C.N.Q. R. ....     | 52.5   | 47.5  | 57.0  | 60.0  | 57.0  | ..... | ..... |
| Louis Leclerc.....                   | St. Guillaume.....                  | Yamaska.....       | WP 2.....              | St. Guillaume.....           | C. P. R. ....      | 52.5   | 56.5  | ..... | ..... | ..... | ..... | ..... |
| E. Marchand.....                     | St. Joseph .....                    | Nicolet.....       | North Star<br>128..... | Daveluyville .....           | I. C. R. ....      | 52.5   | 55.8  | 51.5  | 57.5  | 53.0  | ..... | ..... |
| A. Paquette .....                    | St. Magloire.....                   | Bellechasse.....   | A 543 .....            | St. Sabine.....              | Q. C. R. ....      | 52.6   | 54.1  | ..... | ..... | ..... | ..... | ..... |
| F. Beaucheno.....                    | Béancococ.....                      | Nicolet.....       | A 548 .....            | Riv. Gentilly.....           | Q. M. & S. ....    | 52.6   | ..... | ..... | ..... | ..... | ..... | ..... |
| Aug. Boucher.....                    | St. Cléophas.....                   | Joliette .....     | Aug Boucher.....       | St. Félix de Valois.....     | C. P. R. ....      | 52.6   | 58.5  | 52.7  | ..... | ..... | ..... | ..... |
| Joseph Blanchette.....               | Ste. Anne de la Poca-<br>tière..... | Kamouraska .....   | K 18.....              | St. Pacome.....              | I. C. R. ....      | 52.6   | 50.0  | 56.6  | 59.5  | ..... | ..... | ..... |
| Gendreau & Imbeau .....              | St. Luc .....                       | Matane .....       | 43 .....               | Matane .....                 | C. & G. T. R. .... | 52.6   | ..... | 45.2  | 58.3  | ..... | ..... | ..... |
| P. Plante.....                       | St. Joseph de Lepage .....          | Rimouski.....      | 85 .....               | St. Flavie.....              | I. C. R. ....      | 52.6   | 50.7  | 52.0  | 55.6  | ..... | 53.6  | ..... |
| E. Ménard.....                       | Acton Vale.....                     | Bagot.....         | Dale 53.....           | Acton.....                   | G. T. R. ....      | 52.6   | 54.7  | 57.0  | 57.5  | 56.4  | ..... | ..... |
| Daudelin & Despris.....              | St. Pie.....                        | Bagot.....         | M 76.....              | St. Pie.....                 | C. P. R. ....      | 52.7   | 54.0  | 45.5  | 48.0  | ..... | 50.3  | 56.1  |
| Jean Faucher.....                    | Ste. Marie.....                     | Beauce.....        | R 137 .....            | St. Marys.....               | Q. C. R. ....      | 53.0   | ..... | ..... | ..... | ..... | ..... | ..... |
| A. Godin.....                        | St. Wenceslas.....                  | Nicolet.....       | A 472 .....            | St. Wenceslas.....           | I. C. R. ....      | 53.0   | ..... | ..... | ..... | ..... | ..... | ..... |
| J. B. Thériault .....                | St. Modeste .....                   | Temiscouata .....  | Brae 20 .....          | Cacouna.....                 | I. C. R. ....      | 53.0   | 50.6  | 53.1  | 52.2  | 50.3  | 54.6  | ..... |
| Syndicat de Ste. Philo-<br>mene..... | Fortierville.....                   | Lotbinière.....    | F R 79.....            | Fortierville.....            | Q. M. & R. ....    | 53.0   | 52.0  | ..... | 51.8  | ..... | ..... | ..... |
| Louis Perrier.....                   | St. Evariste.....                   | Beauce.....        | Hill Top 65.....       | St. Evariste.....            | Q. C. R. ....      | 53.0   | 51.0  | 55.3  | 64.0  | 50.6  | ..... | ..... |
| A. Belzile.....                      | St. Mathieu.....                    | Rimouski.....      | M.....                 | St. Simon.....               | I. C. R. ....      | 53.2   | 54.2  | 52.9  | 53.3  | 54.0  | ..... | ..... |
| Jos. Ancil.....                      | Riv. Blanche.....                   | Matane.....        | Brae 11.....           | Riv. Blanche.....            | C. & G. T. R. .... | 53.3   | 54.8  | ..... | ..... | ..... | ..... | ..... |
| L. J. Desilets.....                  | St. Gertrude.....                   | Nicolet.....       | HOH 52.....            | Beaucourt.....               | Q. M. & S. R. .... | 53.4   | ..... | 50.0  | ..... | ..... | ..... | ..... |
| Exilius Desroches.....               | St. Beatrice.....                   | Joliette.....      | S G.....               | St. Félix de Valois.....     | C. P. R. ....      | 53.5   | 51.8  | 48.0  | ..... | ..... | ..... | ..... |
| Chouinard & Dubuc .....              | Mégantic.....                       | Beauce.....        | Lake 14.....           | Mégantic.....                | Q. C. R. ....      | 53.6   | ..... | ..... | ..... | ..... | ..... | ..... |
| Trudel .....                         | St. Roch L'Achigan .....            | L'Assomption.....  | J G.....               | Cabane Ronde.....            | C. P. R. ....      | 53.7   | ..... | ..... | ..... | ..... | ..... | ..... |
| Honoré Roux.....                     | Victoriaville.....                  | Arthabaska .....   | A 41.....              | Victoriaville.....           | G. T. R. ....      | 53.7   | ..... | ..... | ..... | ..... | ..... | ..... |
| Jean Bernard.....                    | St. Barnabé .....                   | St. Hyacinthe..... | W 42.....              | St. Barnabé.....             | Q. M. & R. S. .... | 53.7   | ..... | ..... | ..... | ..... | ..... | ..... |
| Geo. Vermette.....                   | St. Agapit.....                     | Lotbinière .....   | FR 88.....             | St Agapit.....               | G. T. R. ....      | 53.8   | 56.2  | 46.9  | 51.6  | 53.6  | ..... | ..... |



SESSIONAL PAPER No. 15a

|                     |                        |                |              |                      |               |      |      |      |      |      |      |      |
|---------------------|------------------------|----------------|--------------|----------------------|---------------|------|------|------|------|------|------|------|
| E. Grenon.          | St. Barnabé            | St. Hyacinthe. | Champion.    | St. Barnabé.         | Q. M. & S. R. | 53.8 | 55.2 | 49.1 | 52.9 | 50.8 | 45.6 | 51.7 |
| A. J. Desrosiers.   | St. Félix de Valois.   | Joliette.      | HBR 59       | St. Félix de Valois. | C. P. R.      | 54.0 | 60.0 | 58.5 |      |      |      |      |
| Geo. Bennett.       | New Glasgow.           | Terrebonne.    | Elm Bank     | New Glasgow.         | C. N. Q. R.   | 54.0 | 43.0 | 52.0 | 47.0 | 48.3 |      |      |
| Majorique Gilbert.  | Beauceville.           | Beauce.        | R 129        | Beauceville.         | Q. C. R.      | 54.0 |      |      |      |      |      |      |
| Edouard Jean.       | St. Fabien.            | Rimouski       | F            | St. Fabien.          | I. C. R.      | 54.1 | 53.4 | 56.3 | 53.6 | 53.3 |      |      |
| Raoul Leger.        | St. Scholastique.      | Two Mountains. | Canadian 25. | St. Scholastique.    | C. P. R.      | 54.1 | 55.5 |      |      |      |      |      |
| J. Chamberland.     | Sandy Bay.             | Matane.        | G 518.       | Sandy Bay.           | C. & G. T. R. | 54.2 | 50.4 | 52.8 | 51.5 | 51.0 |      |      |
| A. Bourgault.       | St. Jean Port Joli.    | L'Islet.       | HA 121       | St. Jean Port Joli.  | I. C. R.      | 54.2 |      |      |      |      |      |      |
| J. G. Héroux.       | Terrebonne.            | Terrebonne.    | J G H.       | Terrebonne.          | C. P. R.      | 54.2 | 60.5 | 56.7 |      | 59.5 |      |      |
| Geo. Bourgeois.     | St. Sophie de Mégan-   |                |              |                      |               |      |      |      |      |      |      |      |
|                     | tic.                   | Mégantic.      | HOH 40       | Plessisville.        | G. T. R.      | 54.2 |      |      |      |      |      |      |
| Cyril Godbout.      | St. Eloi.              | Témiscouata.   | C G.         | St. Eloi.            | I. C. R.      | 54.2 | 47.5 | 52.7 | 53.1 |      |      |      |
| Joseph Beaulieu.    | St. Flavie.            | Rimouski       | G 836.       | St. Flavie.          | I. C. R.      | 54.3 | 54.0 | 50.0 |      | 52.5 | 48.6 |      |
| Joseph Fleury.      | St. Léon.              | Maskinongé     | O 3          | Louiseville.         | C. P. R.      | 54.5 | 55.0 | 47.8 | 42.2 | 57.8 | 60.6 | 57.0 |
| P. Dionne           | St. Philippe de Néri.  | Kamouraska.    | K 21         | St. Philippe.        | I. C. R.      | 54.5 | 54.2 | 56.3 | 59.7 | 58.0 |      |      |
| G. L. Houle.        | Daveluyville.          | Arthabaska     | A 466.       | Daveluyville.        | I. C. R.      | 54.5 |      |      |      |      |      |      |
| A. Brasseur.        | St. Christine.         | Bagot.         | Canadian 9.  | Danby.               | G. T. R.      | 54.6 | 56.4 | 57.1 |      |      |      |      |
| Aug. Fortin.        | St. Cyrille.           | L'Islet.       | A F          | L'Islet.             | I. C. R.      | 54.6 | 54.2 | 51.6 |      | 52.3 |      |      |
| John April.         | Chemin Taché.          | Témiscouata.   | 143.         | St. Arsène.          | I. C. R.      | 54.6 | 54.2 | 54.3 | 55.1 | 52.3 |      |      |
| M. Desjardins.      | Cote St. Hermas        | Two Mountains. | D 29         | St. Hermas.          | C. P. R.      | 54.6 |      |      |      |      |      |      |
| Ferdinand Thibault. | L'Islet Station.       | L'Islet.       | JO 49        | L'Islet.             | I. C. R.      | 54.7 | 49.7 | 53.0 | 54.5 | 54.0 |      |      |
| Octave Roy.         | St. Ephrem             | Beauce.        | R            | St. Ephrem           | Q. C. R.      | 55.0 | 55.0 |      |      |      |      |      |
| Joseph Crepeau.     | Chertsey.              | Montcalm       | L 15.        | Rawdon.              | C. N. Q. R.   | 55.0 |      |      |      |      |      |      |
| C. Bernier.         | Cap St. Ignace.        | Montmagny      | R 126.       | Cap St. Ignace.      | I. C. R.      | 55.0 | 57.2 | 51.9 | 58.0 |      |      |      |
| A. Drouin.          | St. Sophie de Lacorne  | Terrebonne.    | AD           | Ste Sophie.          | C. N. R. Q.   | 55.0 | 51.0 | 52.7 | 59.0 | 51.8 |      |      |
| Eug. Casavant.      | Upton.                 | Bagot.         | Rose 33.     | Upton                | G. T. R.      | 55.0 | 51.0 |      |      |      |      |      |
| J. A. Ménard.       | Acton Vale.            | Bagot.         | Dale 30.     | Acton.               | G. T. R.      | 55.0 | 55.0 |      |      |      |      |      |
| J. Ladger Lapalme.  | St. Hugues.            | Bagot.         | Hillcrest 1. | St. Hugues.          | C. P. R.      | 55.0 | 55.8 | 54.5 | 56.0 | 52.0 | 55.0 |      |
| P. Laugleis.        | Trois Pistoles.        | Témiscouata    | X            | Trois Pistoles.      | I. C. R.      | 55.0 | 56.2 | 54.4 | 52.1 | 50.7 |      |      |
| Chaput & Tremblay.  | Ste. Angèle de Méritz. | Rimouski       | PL 1.        | St. Flavie.          | I. C. R.      | 55.0 | 59.5 | 52.6 |      | 57.0 | 53.3 |      |
| Joseph Tremblay.    | Ste. Elizabeth         | Joliette.      | V            | Ste. Elizabeth       | C. N. Q. R.   | 55.3 |      | 41.8 | 51.1 | 50.7 |      |      |
| W. St. Onge.        | Ste. Félicité.         | Matane.        | Reg. 886.    | Matane.              | C. & Q. T. R. | 55.3 | 60.8 | 56.4 | 55.8 | 55.5 |      |      |
| A. Bourbonnais.     | St. Grégoire.          | Iberville      | F & M 41.    | Mont Johnson.        | Q. M. & S. R. | 55.5 | 62.8 | 54.8 | 58.2 | 54.3 |      | 53.2 |
| G. W. Jutras.       | St. Polycarpe.         | Soulanges.     | CP 81.       | St. Polycarpe.       | G. T. R.      | 55.5 |      | 56.0 |      |      |      |      |
| E. H. Dumas.        | L'Avenir               | Drummond       | CBJ 4.       | Danby.               | G. T. R.      | 55.5 |      |      |      |      |      |      |
| Joseph Anctil.      | N. D. du Lac.          | Témiscouata.   | G 803        | N. D. du Lac.        | T. R.         | 55.5 | 56.1 | 56.2 |      |      |      |      |
| A. Tremblay.        | Ste. Louise.           | L'Islet.       | JO 42        | Ste. Louise.         | I. C. R.      | 55.5 | 53.0 |      |      |      |      |      |
| Roch Gamache        | St. Aubert.            | L'Islet.       | Reg. 894     | St. Jean Port Joli.  | I. C. R.      | 55.5 | 57.8 | 52.7 | 57.7 |      |      |      |
| O. Hardy.           | Bissonnette.           | Montcalm       | RG           | St. Lin.             | C. P. R.      | 55.5 | 54.5 |      |      |      |      |      |
|                     | St. Sylvere.           | Nicolet.       | North Star   |                      |               |      |      |      |      |      |      |      |
|                     |                        |                | 100          | Daveluyville.        | I. C. R.      | 55.6 | 55.5 |      |      |      |      |      |
| F. Vaillancourt.    | Bonaventure.           | Bonaventure.   | FV           | Bonaventure.         | Q. O. R.      | 55.6 |      |      |      |      |      |      |
| N. Gadoury.         | St. Jean de Matha.     | Joliette       | CP 146.      | St. Félix de Valois. | C. P. R.      | 55.6 | 53.4 | 52.2 |      |      |      |      |
| A. Dupont.          | Ste. Christine.        | Bagot.         | Dale 33.     | Danby                | G. T. R.      | 55.6 | 59.2 |      |      |      |      |      |
| Urgèle Monfret      | Ste. Emelie.           | Lotbinière     | CP 75        | Fortierville.        | Q. M. & S. R. | 55.6 | 60.4 |      |      |      |      |      |
| Ovide Blais.        | St. Grégoire.          | Nicolet.       | A 592        | St. Grégoire.        | Q. M. & S. R. | 55.6 |      |      |      |      |      |      |
| Cassin Bros.        | Kingsey                | Drummond.      | Kingsey C.   | Richmond             | G. T. R.      | 55.6 | 49.1 | 46.3 | 52.5 | 43.6 | 44.1 |      |
| C. Proulx           | South Durham           | Drummond       | Rose 13.     | South Durham.        | G. T. R.      | 55.6 | 63.5 |      |      |      |      |      |
| J. O. Desrochers.   | St. Léonard.           | Nicolet.       | SL 1.        | St. Léonard Jct.     | I. C. R.      | 55.7 |      |      |      |      |      |      |



TEMPERATURES OF QUEBEC AND ONTARIO BUTTER AT COUNTRY SHIPPING POINTS—Continued.

Average Temperature of Creamery Butter at Shipping Points in the Province of Quebec for seven years, 1905 to 1911 inclusive:  
J. N. Lemieux, Inspector—Continued.

| Name of proprietor<br>or<br>Manager. | Post Office Address.     | County.      | Marks.            | Railway Shipping<br>Station. | Railway. | YEARS. |       |       |       |       |       |       |
|--------------------------------------|--------------------------|--------------|-------------------|------------------------------|----------|--------|-------|-------|-------|-------|-------|-------|
|                                      |                          |              |                   |                              |          | 1911.  | 1910. | 1909. | 1908. | 1907. | 1906. | 1905. |
| A. Toutant.                          | St. Grégoire             | Nicolet      | North Star<br>37. | St. Grégoire                 | Q.M&S.R. | 55.7   | 56.8  | 59.7  | 60.0  |       |       |       |
| Joseph Roy.                          | Berthier en Bas.         | Montmagny    | 126.              | St. Vallier                  | I. C. R. | 55.8   | 61.6  |       |       |       |       |       |
| L. A. Levesque                       | Dessaint                 | Kamouraska   | K 10.             | Dessaint                     | I. C. R. | 56.0   | 51.0  |       |       |       |       |       |
| Eug. Gourgues                        | St. Paul.                | Montmagny    | CL&Co. 360.       | St. Pierre                   | I. C. R. | 56.0   | 57.0  | 55.5  |       |       |       |       |
| H. Charland                          | St. Simon                | Bagot        | Dale 21           | St. Simon                    | C. P. R. | 56.0   | 57.4  | 58.0  | 58.8  | 52.7  | 53.7  |       |
| A. Casavant                          | St. Dominique            | Bagot        |                   | St. Hyacinthe                | C. P. R. | 56.0   | 61.5  |       |       |       |       |       |
| Alb. Champagne                       | St. Emélie de L'Énergie  | Joliette     | AC                | St. Felix de Valois          | C. P. R. | 56.0   | 49.5  | 54.0  |       |       |       |       |
| J. G. Hamelin.                       | St. Polycarpe Jet.       | Soulanges.   | JGH               | St. Polycarpe Jet.           | G. T. R. | 56.0   | 62.0  | 63.5  |       |       |       |       |
| Geo. Bergeron                        | Chacouna                 | Maskinongé   | OG 15.            | St. Paulin                   | C.N.Q.R. | 56.0   | 56.3  |       |       |       |       |       |
| J. B. Lanthier.                      | St. Jérôme               | Terrebonne.  | 56.               | St. Jérôme                   | C.N.Q.R. | 56.0   |       | 56.6  | 58.3  |       |       |       |
| Pierre Dion.                         | St. Liboire.             | Bagot        | H 60.             | Charlotte                    | I. C. R. | 56.0   | 56.0  | 53.2  | 57.2  |       |       |       |
| Joseph Blanchette.                   | St. Anne de la Pocatière | Kamouraska.  | K 17.             | Ste. Anne                    | I. C. R. | 56.1   | 53.0  | 56.6  | 59.5  |       |       |       |
| A. Gaudreau                          | L'Islet.                 | L'Islet      | E & C 15          | Trois Saumons                | I. C. R. | 56.2   | 59.5  | 54.7  | 61.2  | 55.5  |       |       |
| Maurice Beaulieu.                    | St. Philémon             | Bellechasse. | A 541             | St. Valier                   | I. C. R. | 56.2   | 51.4  |       |       |       |       |       |
| Z. A. Leblanc                        | South Durham.            | Drummond.    | H 52.             | South Durham                 | G. T. R. | 56.2   | 62.0  |       |       |       |       |       |
| J. O. Caron                          | St. Georges.             | Beauce.      | G 1076.           | St. Georges                  | Q. C. R. | 56.2   | 64.0  |       |       |       |       |       |
| Nérée Marin                          | Ste. Hélène.             | Kamouraska.  | K 5.              | Ste. Hélène                  | I. C. R. | 56.3   | 51.5  | 57.0  | 59.0  | 58.0  |       |       |
| A. Langevin.                         | Jogues.                  | Bagot        | Peerless 5.       | St. Pie.                     | C. P. R. | 56.3   | 54.0  | 48.5  |       |       |       |       |
| Joseph Binet.                        | Warwick.                 | Arthabaska   | HA 163            | Warwick                      | G. T. R. | 56.3   | 50.2  |       |       |       |       |       |
| Joseph Lemonde.                      | St. Liboire.             | Bagot        | B 74.             | St. Liboire                  | G. T. R. | 56.3   | 51.5  | 56.5  | 59.1  | 53.8  |       |       |
| H. Dubois                            | Upton.                   | Bagot        | OD&S 105.         | Upton.                       | G. T. R. | 56.3   | 49.0  | 54.4  | 57.6  | 54.0  |       |       |
| J. A. Heroux                         | Ste. Perpétue.           | Nicolet      | JB 38.            | Ste. Perpétue                | I. C. R. | 56.5   | 56.5  |       |       |       |       |       |
| Aurèle Leclerc                       | St. Eugène de G.         | Drummond     | Corona.           | Duncan                       | I. C. R. | 56.5   | 57.5  | 57.5  | 60.4  | 49.0  |       |       |
| Joseph St. Pierre.                   | Ste Rosalie.             | Bagot        | R 8               | Ste. Rosalie                 | C. P. R. | 56.5   | 58.6  | 56.0  | 59.0  | 52.0  |       |       |
| Gélas Michon.                        | St. Pie.                 | Bagot        | B 12.             | St. Pie                      | C. P. R. | 56.5   | 53.6  | 47.5  | 50.5  |       | 44.2  | 55.6  |
| H. Lapalma.                          | Abbotsford.              | Rouville.    | Elm Bank.         | Abbotsford                   | C. P. R. | 56.5   | 60.3  | 61.2  | 63.7  | 52.0  | 51.4  | 62.0  |
| Sam Deslauriers.                     | Danby.                   | Drummond.    | Mountain<br>View. |                              |          |        |       |       |       |       |       |       |
| Arthur Doucet                        | St. Léonard.             | Nicolet.     | GD 1.             | Danby                        | G. T. R. | 56.5   | 57.2  |       |       |       |       |       |
| P. Kerouack.                         | St. Eugène               | L'Islet.     | 114.              | St. Léonard Jet.             | I. C. R. | 56.6   | 56.0  |       |       |       |       |       |
| Edmond Bélanger.                     | Cap St. Ignace.          | Montmagny    | R 4.              | L'Islet.                     | I. C. R. | 56.7   | 52.2  | 54.3  | 59.0  | 58.5  |       |       |
|                                      |                          |              |                   | Cap St. Ignace.              | I. C. R. | 56.7   | 53.5  | 55.3  | 58.7  | 58.0  |       |       |



## SESSIONAL PAPER No. 15a

|                         |                              |                       |                          |                 |      |       |       |       |       |       |
|-------------------------|------------------------------|-----------------------|--------------------------|-----------------|------|-------|-------|-------|-------|-------|
| C. Marceau.....         | St. Vallier.....             | CP 76.....            | St. Vallier.....         | I. C. R.....    | 56.7 | 55.5  | 55.0  | 60.0  | 55.5  | ..... |
| Dubois & Deshaies       | St. Sylvere.....             | A 400.....            | Daveluyville.....        | I. C. R.....    | 56.8 | 57.0  | ..... | ..... | ..... | ..... |
| J. E. D. Rioux.....     | St. Françoise.....           | S.....                | Trois Pistoles.....      | I. C. R.....    | 57.0 | ..... | ..... | ..... | ..... | ..... |
| Joseph Bolduc.....      | Morin.....                   | E & C 18.....         | St. Michel.....          | I. C. R.....    | 57.0 | 62.3  | 54.7  | 56.6  | ..... | ..... |
| H. Lacasse.....         | St. Lucie de D.....          | GL 20.....            | Belisle's Mill.....      | C. P. R.....    | 57.0 | 60.4  | 58.5  | 59.3  | 64.3  | ..... |
| Agmis Roy.....          | St. Jean de Matha.....       | V 122.....            | St. Felix de Valois..... | C. P. R.....    | 57.0 | 56.0  | 52.8  | ..... | 54.0  | ..... |
| Oscar Gilbert.....      | St. Ferdinand d'Halifax..... | AG 1.....             | Plessisville.....        | C. P. R.....    | 57.0 | ..... | ..... | 59.2  | ..... | ..... |
| Louis Gauvin.....       | St. Thomas d'Aquin.....      | St. Thomas.....       | St. Hyacinthe.....       | G. T. R.....    | 57.0 | ..... | ..... | ..... | ..... | ..... |
| Geo. Bennett.....       | New Glasgow.....             | Oak Bank.....         | New Glasgow.....         | C. N. Q. R..... | 57.0 | 43.5  | ..... | 57.7  | 48.5  | ..... |
| A. Gazaille.....        | St. Dominique.....           | R 20.....             | St. Pie.....             | C. P. R.....    | 57.1 | 55.6  | 57.7  | 60.0  | ..... | 53.2  |
| Philippe Houle.....     | St. Appolinaire.....         | FR 9.....             | St. Apolmaire.....       | I. C. R.....    | 57.2 | 60.0  | ..... | ..... | ..... | ..... |
| Beaudoin & Roberge..... | St. Come.....                | White Daisies 23..... | St. Georges.....         | Q. C. R.....    | 57.2 | ..... | ..... | ..... | ..... | ..... |
| O. Beaudry.....         | St. Emelie de l'Energie..... | OB.....               | St. Felix de Valois..... | C. P. R.....    | 57.3 | 49.5  | 49.8  | ..... | ..... | ..... |
| Joseph Longpre.....     | St. Emelie de l'Energie..... | JL.....               | St. Felix de Valois..... | C. P. R.....    | 57.3 | ..... | ..... | ..... | ..... | ..... |
| P. H. Gareau.....       | St. Polycarpe.....           | CP 83.....            | St. Polycarpe.....       | G. T. R.....    | 57.3 | 59.5  | 58.2  | ..... | ..... | ..... |
| J. O. Goyette.....      | St. Valerien.....            | T&T 519.....          | Upton.....               | G. T. R.....    | 57.3 | 56.2  | 56.2  | 56.6  | 51.5  | ..... |
| Philippe Hebert.....    | St. Leonard.....             | SL 3.....             | St. Leonard Jc.....      | I. C. R.....    | 57.4 | ..... | ..... | ..... | ..... | ..... |
| E. Lanthier.....        | St. Augustin.....            | Reg 256.....          | St. Eustache.....        | C. P. R.....    | 57.5 | 57.6  | 62.0  | 55.2  | 54.2  | 56.4  |
| Az. Brien.....          | Pont Moussau.....            | 900.....              | St. Lin.....             | C. P. R.....    | 57.5 | 61.5  | 59.2  | ..... | ..... | ..... |
| Docteur Dubé.....       | St. Sylvestre Est.....       | FR 51.....            | St. Agapit.....          | G. T. R.....    | 57.5 | 53.3  | 52.1  | 54.0  | 66.5  | ..... |
| O. W. Seguin.....       | St. Jolycarpe Jet.....       | CLM.....              | St. Polycarpe Jct.....   | G. T. R.....    | 57.5 | 56.0  | 55.3  | ..... | ..... | ..... |
| M. Ethier.....          | St. Julienne.....            | HB 55.....            | St. Julienne.....        | C. N. Q. R..... | 57.5 | ..... | 47.0  | 57.2  | 53.3  | ..... |
| O. Ratelle.....         | St. Liguori.....             | B 40.....             | Montcalm.....            | C. N. Q. R..... | 57.5 | ..... | ..... | ..... | ..... | ..... |
| Cyril Godbout.....      | St. Eloi.....                | Brae 15.....          | St. Rose du Degele.....  | T. R.....       | 57.6 | 60.6  | ..... | ..... | ..... | ..... |
| Louis Pelletier.....    | St. Louis du HaHa.....       | R 32.....             | St. Louis de HaHa.....   | T. R.....       | 57.6 | ..... | ..... | ..... | ..... | ..... |
| P. O. Boyer.....        | St. Michel.....              | 132.....              | St. Michel.....          | I. C. R.....    | 57.6 | 52.4  | 56.2  | ..... | ..... | ..... |
| G. P. Cyr.....          | Lambton.....                 | MAC 97.....           | Courcelles.....          | Q. C. R.....    | 57.6 | 58.6  | ..... | ..... | ..... | ..... |
| G. Daigneault.....      | St. Janvier.....             | .....                 | St. Janvier.....         | C. P. R.....    | 57.6 | 61.0  | ..... | ..... | ..... | ..... |
| Damien Comtois.....     | Cap St. Gabriel.....         | OD&S 72.....          | St. Gabriel.....         | C. P. R.....    | 57.6 | 49.0  | 51.5  | 43.7  | 52.5  | ..... |
| A. Chagnon.....         | Point du Jour.....           | R 55.....             | St. Hyacinthe.....       | G. T. R.....    | 57.6 | ..... | ..... | 63.5  | ..... | ..... |
| O. Phaneuf.....         | St. Hyacinthe.....           | Dale 20.....          | St. Hyacinthe.....       | G. T. R.....    | 57.6 | 61.0  | 57.0  | 51.0  | 61.0  | 67.6  |
| Ant. Allarie.....       | St. Jerome.....              | AA.....               | St. Jerome.....          | C. N. Q. R..... | 57.6 | 52.3  | 55.2  | 58.6  | ..... | ..... |
| Alp. Jean.....          | St. Francois.....            | E&C 3.....            | St. Francois.....        | I. C. R.....    | 57.7 | 63.3  | 56.0  | ..... | ..... | ..... |
| Arthur Blais.....       | St. Vallier Stat.....        | 138.....              | St. Vallier.....         | I. C. R.....    | 57.7 | 63.5  | ..... | ..... | ..... | ..... |
| Hubert Morin.....       | Buckland.....                | E&C 7.....            | St. Charles.....         | I. C. R.....    | 57.7 | 54.7  | 53.0  | ..... | ..... | ..... |
| F. Robillard.....       | St. Edouard.....             | FR.....               | St. Edouard.....         | Cap Jct R.....  | 57.8 | ..... | ..... | ..... | ..... | ..... |
| A. O. Bernard.....      | St. Ephrem de Tring.....     | 126.....              | St. Ephrem.....          | Q. C. R.....    | 58.0 | 58.5  | 55.3  | 56.7  | 54.8  | ..... |
| H. Diamont.....         | St. Leonard.....             | 174.....              | St. Raymond.....         | Q & L St J..... | 58.0 | ..... | ..... | 52.0  | ..... | ..... |
| Denis Larivière.....    | St. Marie de Blandford.....  | HOH 75.....           | Lemieux.....             | I. C. R.....    | 58.0 | 57.6  | 57.5  | 57.5  | ..... | ..... |
| H. Mailhot.....         | St. Gertrude.....            | HOH 51.....           | Daveluyville.....        | I. C. R.....    | 58.0 | 56.5  | 59.5  | 61.0  | 50.0  | ..... |
| J. Eug. Tondreau.....   | Montmagny.....               | N 1.....              | Montmagny.....           | I. C. R.....    | 58.0 | 59.2  | 57.6  | ..... | ..... | ..... |
| H. Laprade.....         | St. Guillaume.....           | Golden Star 32.....   | St. Prime.....           | C. P. R.....    | 58.0 | ..... | 47.0  | ..... | ..... | ..... |
| C. Vadnais.....         | St. Marcel.....              | 3.....                | Cavignac.....            | C. P. R.....    | 58.0 | 60.6  | 55.0  | 59.0  | ..... | ..... |
| Amédé Lapalme.....      | St. Hughes.....              | B 17.....             | Cavignac.....            | C. P. R.....    | 58.0 | 60.4  | 54.7  | 48.0  | 50.0  | ..... |
| A. Lessard.....         | St. Adèle.....               | A. L.....             | St. Adèle.....           | C. P. R.....    | 58.0 | 62.0  | ..... | ..... | ..... | ..... |
| Octave Roberge.....     | St. Felix de Valois.....     | O. Roberge.....       | St. Felix de Valois..... | C. P. R.....    | 58.0 | 49.0  | 54.2  | ..... | 61.3  | ..... |
| A. M. Jutras.....       | Plessisville.....            | HOH 21.....           | Plessisville.....        | G. T. R.....    | 58.0 | ..... | ..... | ..... | ..... | ..... |
| Henri Gagné.....        | Picaud.....                  | HA 127.....           | Victoriaville.....       | G. T. R.....    | 58.0 | ..... | ..... | ..... | ..... | ..... |



TEMPERATURES OF QUEBEC AND ONTARIO BUTTER AT COUNTRY SHIPPING POINTS—*Continued.*

Average Temperatures of Creamery Butter at Shipping Points in the Province of Quebec for seven years, 1905 to 1911, inclusive.  
J. N. Lemieux, Inspector—*Continued.*

| Name of Proprietor<br>or<br>Manager. | Post Office Address.     | County.        | Marks.      | Railway Shipping<br>Station. | Railways. | YEARS. |       |       |       |       |       |       |
|--------------------------------------|--------------------------|----------------|-------------|------------------------------|-----------|--------|-------|-------|-------|-------|-------|-------|
|                                      |                          |                |             |                              |           | 1911.  | 1910. | 1909. | 1908. | 1907. | 1906. | 1905. |
|                                      |                          |                |             |                              |           | Deg.   | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  |
| Horace Brunelle.                     | Upton.                   | Bagot.         | HBR 52.     | Upton.                       | G.T.R.    | 58.0   | 53.5  | 52.8  | 56.7  | 56.4  |       |       |
| Geo. Beausoleil.                     | St. Alexis.              | Montcalm.      | OD&S 19.    | St. Alexis.                  | C.N.Q.R.  | 58.0   | 53.5  | 62.7  | 58.2  | 55.3  |       |       |
| E. Beuregard.                        | Kildare.                 | Joliette.      | North Star. | Montcalm.                    | C.N.Q.R.  | 58.0   |       | 58.5  | 57.0  |       |       |       |
| Ephrem Aubin.                        | St. Apollinaire.         | Lotbinière.    | EB 80.      | St. Apollinaire.             | I.C.R.    | 58.2   | 60.3  |       |       |       |       |       |
| O. Malenfant.                        | Ste. Rose du Degel.      | Témiscouata.   | 2000.       | Edmundston.                  | T.R.      | 58.2   | 61.5  | 61.0  |       |       |       |       |
| J. A. Ratte.                         | St. Paul.                | Montmagny.     | CP 121.     | St. Pierre.                  | I.C.R.    | 58.2   | 51.3  | 55.1  | 57.4  | 57.0  |       |       |
| D. J. Cleary.                        | Shawbridge.              | Terrebonne.    | S.B.        | Shawbridge.                  | C.P.R.    | 58.2   | 60.0  | 61.5  | 59.5  | 59.3  | 63.0  |       |
| A. Blouin.                           | Rawdon.                  | Montcalm.      | K.          | Montcalm.                    | C.N.Q.R.  | 58.3   | 51.5  |       | 56.0  |       |       |       |
| R. Maillet.                          | St. Honoré.              | Beauce.        | D 23.       | St. Evariste.                | Q.C.R.    | 58.3   | 59.0  |       |       |       |       |       |
| Ringnette & Frère.                   | St. Nazaire d'Acton.     | Bagot.         | W 40.       | Duncan.                      | I.C.R.    | 58.3   | 52.5  | 56.4  | 60.8  | 47.0  |       |       |
| Joseph Ruel.                         | St. Charles.             | Bellechasse.   | R.          | St. Charles.                 | I.C.R.    | 58.3   |       |       |       |       |       |       |
| Theberge & Letestu.                  | St. Pie.                 | Bagot.         | M 29.       | St. Pie.                     | C.P.R.    | 58.3   | 58.6  |       |       |       |       |       |
| Louis Roy.                           | St. Jacques Nord.        | Montcalm.      | OD&S 100.   | Dugas.                       | C.N.Q.R.  | 58.5   | 49.0  | 49.0  | 55.0  |       |       |       |
| J. A. Philibert.                     | L'Epiphanie.             | L'Assomption.  | Reg 492.    | L'Epiphanie.                 | C.N.Q.R.  | 58.5   | 55.0  | 63.0  |       |       |       |       |
| D. Larivière.                        | St. Anne.                | Richelieu.     | WP 8.       | St. Anne.                    | Q.M&S.R.  | 58.5   |       |       |       |       |       |       |
| J. Thomas Dyon.                      | St. Odilon de Coulombe.  | Dorchester.    | WB 83.      | St. Joseph.                  | Q.C.R.    | 58.5   |       |       |       |       |       |       |
| J. E. Dion.                          | St. Sébastien.           | Beauce.        | D 50.       | St. Sébastien.               | Q.C.R.    | 58.5   |       |       |       |       |       |       |
| John Albert.                         | Albertine, N.B.          | Madawaska.     | HBR P 54.   | St. Hilaire.                 | T.R.      | 58.5   |       | 58.0  |       |       |       |       |
| J. P. Rochelleau.                    | Pauline.                 | Rouville.      | Dale 11.    | Abbotsford.                  | C.P.R.    | 58.5   | 59.6  | 55.0  |       |       |       |       |
| Joseph Roussel.                      | La Plaine.               | Terrebonne.    | HBR 104.    | La Plaine.                   | C.P.R.    | 58.5   |       |       |       |       |       |       |
| J. H. Paquette.                      | St. Valerien.            | Shefford.      | Cedar Point |                              |           |        |       |       |       |       |       |       |
| R. Chagnon.                          | St. Germain de G.        | Arthabaska.    | 1.          | Upton.                       | G.T.R.    | 58.5   | 52.5  | 54.2  | 58.4  | 57.0  |       |       |
| Théodore Rose.                       | Petit Matane.            | Matane.        | F&M 9.      | Duncan.                      | I.C.R.    | 58.6   | 62.5  | 54.5  | 57.3  |       |       |       |
| Ad. Lecompte.                        | Delagrave.               | Montmagny.     | Brae 6.     | Matane.                      | C.&Q.T.R. | 58.6   | 60.0  | 63.6  |       |       |       |       |
| A. Touchette.                        | Milton East.             | Shefford.      | E&C 10.     | St. Pierre.                  | I.C.R.    | 58.6   | 59.5  | 56.3  |       |       |       |       |
| J. D. Blanchette.                    | St. Roch des Aulnaies.   | L'Islet.       | 53.         | St. Pie.                     | C.P.R.    | 58.8   | 60.6  |       |       |       |       |       |
| Hardy Frères & Cie.                  | Ste. Angélique.          | Portneuf.      | 8.          | Elgin Road.                  | I.C.R.    | 58.8   | 58.0  | 55.3  | 58.9  | 56.0  |       |       |
| A. Laporte.                          | St. Elizabeth.           | Joliette.      | LLBR.       | Pont Rouge.                  | C.P.R.    | 59.0   |       |       |       | 59.3  |       |       |
| Leon Boucher.                        | St. Valère de Bulstrode. | Arthabaska.    | HBR 100.    | Ste. Emélie.                 | C.P.R.    | 59.0   |       | 56.0  |       |       |       |       |
| H. Leclerc.                          | Lapréstation.            | St. Hyacinthe. | CM 30.      | Victoriaville.               | G.T.R.    | 59.0   | 52.9  |       |       |       |       |       |
| W. Ferron.                           | St. Léon.                | Maskinongé.    | CP 80.      | St. Hyacinthe.               | G.T.R.    | 59.0   |       |       |       |       |       |       |
|                                      |                          |                | OG 30.      | St. Paulin.                  | C.N.Q.R.  | 59.0   | 56.6  | 55.6  | 54.6  | 52.7  |       |       |



## SESSIONAL PAPER No. 15a

| M. Brault.            | Montcalm                 | Montcalm       | HM 4         | Montcalm             | C.N.Q.R.  | 59.0 | 57.5 | 52.0 | 50.3 |      |
|-----------------------|--------------------------|----------------|--------------|----------------------|-----------|------|------|------|------|------|
| H. S. Tousignant.     | St. Pierre les Becquets. | Nicolet.       | H.S.T.       | Becquets.            | Q.M.&S.R. | 59.0 |      |      |      |      |
| Syndicat St. Sophie.  | St. Sophie de Levrard    | Nicolet.       | EB 65.       | Becquets.            | Q.M.&S.R. | 59.0 |      |      |      |      |
| Charles Veilleux.     | Rivière Gilbert.         | Beauce.        | D 16.        | St. Georges.         | Q.C.R.    | 59.0 |      |      |      |      |
| Gédéon Roy.           | St. Ephrem de Tring.     | "              | R 3.         | St. Ephrem.          | Q.C.R.    | 59.0 | 53.0 | 57.3 | 49.1 |      |
| Albert Roy.           | "                        | "              | LP 27.       | "                    | Q.C.R.    | 59.0 | 56.0 | 55.7 | 56.3 |      |
| J. L. Janelle.        | St. Sylvere.             | Nicolet.       | G 840.       | Daveluyville.        | I.C.R.    | 59.0 |      | 62.0 |      |      |
| Philippe, Héon.       | St. Louis de Blandford   | "              | HOH 10.      | "                    | I.C.R.    | 59.0 |      |      |      |      |
| Napoléon Fortier.     | St. Eulalie.             | "              | 31.          | Aston Jct.           | I.C.R.    | 59.9 |      |      |      |      |
| Conrad Lacharité.     | St. Perpetue.            | "              | J.B. 6.      | St. Perpetue.        | I.C.R.    | 59.0 |      |      |      |      |
| G. Binet.             | St. Eustache.            | Two Mountains  | F & M 199.   | St. Eustache.        | C.P.R.    | 59.0 |      |      |      |      |
| E. Brosseau.          | St. Sauveur des Monts.   | Terrebone      | E.B 1.       | St. Jérôme.          | C.N.Q.R.  | 59.0 | 62.7 | 59.3 | 63.5 |      |
| McNeil, Frères.       | Douglasburg              | Napierville.   | Douglasburg  |                      |           |      |      |      |      |      |
|                       |                          |                | No. 1        | Napierville.         | Nap Jet R | 59.2 |      | 53.0 |      |      |
| L. Martineau.         | Emile Ville              | Bagot.         | Royal        | St. Pie.             | C.P.R.    | 59.2 |      | 62.0 | 53.5 |      |
| Désiré Milot.         | Yamachiche.              | St. Maurice.   | J.A.M 6      | Yamachiche.          | C.P.R.    | 59.3 |      | 63.5 |      |      |
| L. A. Perrault.       | Stanford.                | Arthabaska.    | CP 28.       | Stanford             | G.T.R.    | 59.3 |      | 60.0 |      |      |
| Alph. Perrault.       | Le Precieux Sang.        | Nicolet.       | CM 58.       | Lac St. Paul.        | Q.M.S.R.  | 59.3 |      |      |      |      |
| F. Phaneuf.           | Upton.                   | Bagot.         | Peerless 3.  | Upton.               | G.T.R.    | 59.4 | 51.0 | 53.5 | 54.5 |      |
| A. Daneau.            | Aston Jct.               | Nicolet.       | CM 54.       | Aston Jct.           | I.C.R.    | 59.5 |      |      |      |      |
| Mathias Brosseau.     | Piedmont.                | Terrebone.     | M B.         | Piedmont.            | C.P.R.    | 59.5 | 63.5 | 62.0 |      |      |
| W. Vézina.            | Cap Santé.               | Portneuf.      | WVCS.        | St. Basile.          | C.P.R.    | 59.5 | 57.6 | 66.2 | 59.3 |      |
| Félix Rondeau.        | St. Emélie de L'Éner-    |                |              |                      |           |      |      |      |      |      |
|                       | gie.                     | Joliette.      | F.R.         | St. Félix de Valois. | C.P.R.    | 59.5 | 51.0 |      |      |      |
| Joseph Houle.         | St. Jean de Matha        | "              | J.H.         | "                    | C.P.R.    | 59.5 | 50.5 |      |      |      |
| H. B. Bovin.          | St. Félix de Valois.     | "              | H.B.         | "                    | C.P.R.    | 59.5 | 56.0 |      |      |      |
| J. B. Ravenelle.      | St. Damase.              | St. Hyacinthe. | T&T 548.     | St. Damase.          | Q.M.S.R.  | 59.5 |      |      |      |      |
| Amédé St. Hilaire.    | St. Germaine             | Dorchester.    | LC 22.       | St. Germaine.        | Q.C.R.    | 59.5 |      |      |      |      |
| J. Eug. Fortin.       | St. Cyrille.             | L'Islet.       | CP 68.       | L'Islet.             | I.C.R.    | 59.6 |      |      |      |      |
| Syndicat Ste Justine. | St. Justine.             | Dorchester.    | E.L 34.      | St. Justine.         | Q.C.R.    | 59.6 |      |      |      |      |
| T. Messier.           | St. Hélène.              | Bagot.         | D.           | Bagot.               | I.C.R.    | 59.8 | 58.5 | 63.3 | 47.0 |      |
| J. Dessert.           | Petite Rivière.          | Two Mountains. | F 6.         | St. Eustache.        | C.P.R.    | 59.8 | 58.0 | 58.5 |      |      |
| Donat Gaudet.         | St. Sylvere.             | Nicolet.       | HOH 52.      | Daveluyville.        | I.C.R.    | 60.0 |      |      |      |      |
| Joseph Lucas.         | St. Gabriel.             | Rimouski.      | Rose Hill 7. | St. Luce             | I.C.R.    | 60.0 |      |      |      |      |
| L. P. Paradis.        | St. Raphael.             | Bellechase     | Canadian 76  | St. Vallier.         | I.C.R.    | 60.0 | 55.4 | 58.6 | 55.8 |      |
| Paul Robidoux.        | St. Marcel.              | Richelieu.     | WP 7.        | Cavignac.            | C.P.R.    | 60.0 | 61.3 | 53.5 |      |      |
| Narcisse Tetreault.   | St. Hughes.              | Bagot.         | R 7.         | St. Hughes.          | C.P.R.    | 60.0 | 54.5 | 59.0 | 50.5 | 53.6 |
| Ludger Lacasse.       | St. Lucie de D.          | Terrebone.     | D 27.        | St. Agathe.          | C.P.R.    | 60.0 |      |      |      |      |
| Louis Archambault.    | Lachevrotière.           | Portneuf.      | L A 20.      | St. Basile.          | C.P.R.    | 60.0 |      | 54.5 | 57.6 | 55.5 |
| S. Anmond.            | St. Come                 | Joliette.      | WB 80.       | Joliette.            | C.P.R.    | 60.0 | 51.1 |      |      |      |
| Simeon Rodrigue.      | St. Georges.             | Beauce.        | D 22.        | St. Georges.         | Q.C.R.    | 60.0 |      |      |      |      |
| Hubert Jean.          | St. Evariste.            | "              | LC 186.      | St. Evariste.        | Q.C.R.    | 60.0 | 58.0 |      |      |      |
| M. Beauchesne.        | Pinnacle.                | Richmond.      | M. Boucher.  | Danville.            | G.T.R.    | 60.0 |      | 62.0 |      |      |
| M. Boucher.           | St. Mélaïne.             | Joliette.      | EB 5.        | Joliette.            | C.N.Q.R.  | 60.0 | 53.3 | 52.5 | 56.5 | 60.0 |
| E. Brosseau.          | St. Sauveur des M.       | Terrebone.     | ED.          | St. Jérôme.          | C.N.Q.R.  | 60.0 | 69.0 | 64.3 | 66.0 |      |
| E. Desjardins.        | New Glasgow.             | "              | HBR 107      | New Glasgow.         | C.N.Q.R.  | 60.0 |      |      |      |      |
| C. Forget.            | Les Dalles               | Montcalm.      | AA.          | Montcalm.            | C.N.Q.R.  | 60.0 | 62.0 | 58.0 |      |      |
| A. Allard.            | L'Assomption.            | L'Assomption.  | M 8.         | L'Assomption.        | C.N.Q.R.  | 60.0 |      |      |      |      |
| N. Frappier.          | St. Aimé.                | Richelieu.     | 98.          | St. Aimé.            | Q.M.S.R.  | 60.0 |      | 56.0 |      |      |
| Marcoux.              | Ste Marie.               | Beauce.        |              | St. Marys            | Q.C.R.    | 60.0 |      |      |      |      |



TEMPERATURES OF QUEBEC AND ONTARIO BUTTER AT COUNTRY SHIPPING POINTS—Continued.  
Average Temperatures of Creamery Butter at Shipping Points in the Province of Quebec for seven years, 1905 to 1911 inclusive:  
J. N. Lemieux, Inspector—Continued.

| Name of Proprietor<br>or<br>Manager. | Post Office Address.               | County.       | Marks.                  | Railway Shipping<br>Station. | Railway. | YEARS. |       |       |       |       |       |       |
|--------------------------------------|------------------------------------|---------------|-------------------------|------------------------------|----------|--------|-------|-------|-------|-------|-------|-------|
|                                      |                                    |               |                         |                              |          | 1911.  | 1910. | 1909. | 1908. | 1907. | 1906. | 1905. |
|                                      |                                    |               |                         |                              |          | Deg.   | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  |
| E. Ménard.....                       | L'Islet.....                       | L'Islet       | 1374.....               | Anse à Gile's.....           | I.C.R.   | 60.2   | 59.7  | 55.1  | 62.5  | 60.0  | ..... | ..... |
| Ludger Lacasse.....                  | Ste. Lucie de D.....               | Terrebonne    | D. 39.....              | St. Agathe.....              | C.P.R.   | 60.3   | 60.0  | 55.0  | 57.2  | ..... | ..... | ..... |
| Nap. Lussier.....                    | Upton.....                         | Bagot         | HBR 37.....             | Upton.....                   | G.T.R.   | 60.3   | 52.5  | 57.8  | 58.8  | ..... | ..... | ..... |
| J. Lachapelle.....                   | St. Jacques.....                   | Montcalm      | J. Lachapelle.....      | St. Jacques.....             | C.N.Q.R. | 60.3   | 53.0  | 55.1  | ..... | 53.5  | ..... | ..... |
| Louis Fournier.....                  | St. Samuel.....                    | Beauce        | Reg. 1028.....          | St. Samuel.....              | Q.C.R.   | 60.3   | ..... | ..... | ..... | ..... | ..... | ..... |
| L. E. Cote.....                      | Montmagny.....                     | Montmagny     | 7.....                  | Montmagny.....               | I.C.R.   | 60.4   | 60.7  | 58.2  | 59.5  | 61.0  | ..... | ..... |
| Alfred Duquette.....                 | St. Brigitte des Sautes.....       | Nicolet       | A 580.....              | Mitchell.....                | I.C.R.   | 60.5   | 64.5  | ..... | ..... | ..... | ..... | ..... |
| A. Legaré.....                       | St. Hippolyte de Ky.....           | Terrebonne    | ALL.....                | Shawbridge.....              | C.P.R.   | 60.5   | 50.2  | 64.5  | 64.5  | 64.5  | ..... | ..... |
| A. Pelissier.....                    | St. Aimé.....                      | Richelieu     | NP 14.....              | St. Louis.....               | Q.M.S.R. | 60.5   | ..... | ..... | ..... | ..... | ..... | ..... |
| Alp. Roberge.....                    | St. Samuel.....                    | Beauce        | D 45.....               | St. Samuel.....              | Q.C.R.   | 60.5   | 57.5  | 55.5  | 59.7  | 61.0  | ..... | ..... |
| Z. Cloutier.....                     | St. Pierre Riv. du Sud.....        | Montmagny     | 806.....                | St. Pierre.....              | I.C.R.   | 60.6   | 64.5  | ..... | ..... | ..... | ..... | ..... |
| Philippe Laroche.....                | St. Norbert.....                   | Arthabaska    | G 51.....               | Victoriaville.....           | G.T.R.   | 60.6   | ..... | ..... | ..... | ..... | ..... | ..... |
| Aurèle Leclerc.....                  | St. Eugène de G.....               | Drummond      | 10.....                 | St. Eugène.....              | I.C.R.   | 61.0   | 62.0  | 56.3  | 59.5  | 53.0  | ..... | ..... |
| D. T. Brunet.....                    | St. Eustache.....                  | Two Mountains | G 1 M 32.....           | St. Eustache.....            | C.P.R.   | 61.0   | 61.8  | 56.5  | 60.0  | ..... | ..... | ..... |
| E. Casavant.....                     | Papineau.....                      | Rouville      | EC 1.....               | Papineau.....                | C.P.R.   | 61.0   | 59.6  | 56.5  | 60.0  | ..... | ..... | ..... |
| O. Ratelle.....                      | St. Paul.....                      | Joliette      | B 39.....               | Lavaltrie.....               | C.P.R.   | 61.0   | 59.2  | 61.5  | ..... | 68.0  | ..... | ..... |
| C. Robinson.....                     | Masouche.....                      | L'Assomption  | WD 38.....              | Masouche.....                | C.P.R.   | 61.0   | 60.0  | 54.6  | 56.9  | 54.8  | ..... | ..... |
| Noel Massé.....                      | St. Ephrem de Tring.....           | Beauce        | CP 120.....             | St. Ephrem.....              | Q.C.R.   | 61.2   | 61.2  | 63.6  | 61.0  | ..... | ..... | ..... |
| Zenon Binet.....                     | St. Augustin.....                  | Two Mountains | 316.....                | St. Augustin.....            | C.P.R.   | 61.3   | 62.5  | ..... | ..... | ..... | ..... | ..... |
| Philémon Lebuis.....                 | Grande Pénitence.....              | "             | Aug. Du-<br>charme..... | St. Eustache.....            | C.P.R.   | 61.3   | ..... | ..... | ..... | ..... | ..... | ..... |
| Aug. Ducharme.....                   | St. Jean de Matha.....             | Joliette      | Cedar Point             | St. Félix de Valois.....     | C.P.R.   | 61.3   | ..... | ..... | ..... | ..... | ..... | ..... |
| O. E. Rajotte.....                   | Upton.....                         | Bagot         | 7.....                  | Upton.....                   | G.T.R.   | 61.3   | 55.0  | 56.2  | 58.2  | 52.5  | ..... | ..... |
| Joseph Provost.....                  | L'Épiphanie.....                   | L'Assomption  | H. Provost.....         | L'Épiphanie.....             | C.N.Q.R. | 61.3   | 57.1  | 53.6  | 60.0  | 55.0  | ..... | ..... |
| J. B. Boisclair.....                 | St. Samuel.....                    | Nicolet       | A 374.....              | St. Weecllas.....            | I.C.R.   | 61.5   | 60.5  | ..... | ..... | ..... | ..... | ..... |
| Pierre Noël.....                     | St. Apollinaire.....               | Lotbinière    | PN 1.....               | St. Apollinaire.....         | I.C.R.   | 61.5   | ..... | ..... | ..... | ..... | ..... | ..... |
| Adrien Milot.....                    | Yamachiche.....                    | St. Maurice   | A M.....                | Yamachiche.....              | C.P.R.   | 61.5   | 53.2  | 63.0  | ..... | ..... | ..... | ..... |
| Lucien Robert.....                   | Yamachiche.....                    | St. Maurice   | O G 32.....             | Yamachiche.....              | C.P.R.   | 61.5   | 53.8  | 52.0  | 45.3  | 54.3  | ..... | ..... |
| D. Guilbault.....                    | St. Gabriel de B.....              | Berthier      | D G.....                | St. Gabriel.....             | C.P.R.   | 61.5   | ..... | ..... | ..... | ..... | ..... | ..... |
| Camille Joli.....                    | Ste. Emélie de L'Éner-<br>gie..... | Joliette      | 429.....                | St. Félix de Valois.....     | C.P.R.   | 61.5   | 57.0  | 56.5  | ..... | ..... | ..... | ..... |



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|                     |                         |                |             |                      |           |      |       |       |       |
|---------------------|-------------------------|----------------|-------------|----------------------|-----------|------|-------|-------|-------|
| Edouard Fréchette.  | St. Felix de Valois.    | Joliette.      | Reg. 1094.  | St. Felix de Valois. | C.P.R.    | 61.5 | 55.3  | 56.8  | ..... |
| Aldéric Dupré.      | St. Louis de Bonsecours | Richelieu      | N P 16.     | St. Louis.           | Q.M.S.R.  | 61.5 | ..... | ..... | ..... |
| J. E. Dion.         | St. Sébastien.          | Beauce         | D 34.       | St. Sébastien.       | Q.C.R.    | 61.5 | 59.7  | ..... | ..... |
| Wm. Landreville     | St. Jean de Matha       | Joliette       | HBR 91      | St. Felix de Valois. | C.P.R.    | 61.6 | 57.5  | 55.2  | ..... |
| Joseph Bazinet.     | Wotton.                 | Wolfe          | Dale 18.    | Danville             | G.T.R.    | 61.6 | ..... | ..... | ..... |
| J. A. Drouin.       | La Baie.                | Nicolet        | X N.        | La Baie.             | Q.M.S.R.  | 61.6 | 65.0  | ..... | ..... |
| Joseph Desroches.   | Ste. Beatrice.          | Joliette       | R E 65      | Joliette.            | C.N.Q.R.  | 61.7 | 54.0  | 51.0  | ..... |
| Zoel Larose.        | St. Cyrille de W.       | Drummond.      | J B 21.     | St. Cyrille.         | I.C.R.    | 62.0 | ..... | ..... | ..... |
| H. Leroux.          | Ruisseau St. Georges    | Montcalm       | A E 44      | St. Georges.         | C.N.Q.R.  | 62.0 | 52.0  | 52.1  | 52.6  |
| P. Dubaime.         | St. Samuel.             | Nicolet        | A 429.      | St. Wenceslas.       | I.C.R.    | 62.0 | ..... | ..... | ..... |
| Iréne Thibault.     | St. Pamphile.           | L'Islet.       | L C 6.      | St. Jean Port Joli.  | I.C.R.    | 62.0 | 62.0  | ..... | ..... |
| Z. Laroque.         | St. Eustache.           | Two Mountains. | Z L 28.     | St. Eustache.        | C.P.R.    | 62.0 | ..... | ..... | ..... |
| Ovila Gendron.      | Yamachiche.             | St. Maurice.   | V 107.      | Yamachiche           | C.P.R.    | 62.0 | 59.8  | 60.4  | 61.2  |
| Philibert Dussault. | Lapresentation.         | St. Hyacinthe  | R 174.      | St. Hyacinthe.       | G.T.R.    | 62.0 | ..... | ..... | ..... |
| E. Blosseau.        | St. Sauveur des M.      | Terrebonne     | E B 4.      | St. Jerome.          | C.N.Q.R.  | 62.0 | 52.0  | 67.0  | 63.3  |
| Laporte & Frère.    | Kildare.                | Joliette       | L F M.      | Joliette.            | C.N.Q.R.  | 62.1 | ..... | 53.5  | 52.8  |
| Valmore Geory.      | Milton East.            | Shelford.      | Sand Hill.  | St. Pie.             | C.P.R.    | 62.2 | 59.3  | 51.0  | 62.0  |
| Thomas Lacerte.     | St. Severe.             | St. Maurice.   | J A M 9.    | Yamachiche           | C.P.R.    | 62.2 | 56.5  | 62.2  | 63.6  |
| L. Belanger.        | St. Damien.             | Bellechasse.   | 25.         | St. Charles.         | I.C.R.    | 62.5 | 53.3  | 54.4  | 55.1  |
| Albert Desrosiers.  | Ste. Beatrice.          | Joliette.      | A 575.      | Joliette.            | C.N.Q.R.  | 62.5 | 58.0  | 52.5  | 58.0  |
| Geo. Tremblay.      | Laurence.               | Montcalm       | L J. A. R.  | St. Georges.         | C.N.Q.R.  | 62.6 | 56.7  | 58.4  | 61.6  |
| J. Perron.          | St. Casimir.            | Portneuf       | J P 1.      | St. Casimir          | C.N.Q.R.  | 62.6 | 59.5  | ..... | ..... |
| L. S. Pelletier     | Ste. Elizabeth de W.    | Arthabaska     | G 1025.     | Warwick              | G.T.R.    | 63.0 | ..... | ..... | ..... |
| E. B. Cinq-Mars.    | Ste. Gertrude.          | Nicolet.       | HOH 6.      | Becancour.           | Q.M.S.R.  | 63.0 | ..... | ..... | ..... |
| Alf. Nault.         | Précieux Sang.          | Nicolet        | O 225.      | St. Gregoire         | Q.M.S.R.  | 63.0 | ..... | ..... | ..... |
| Hy. Cyr.            | Belle Rivière.          | Two Mountains. | Genva.      | St. Scholastique.    | C.P.R.    | 63.0 | 65.0  | ..... | ..... |
| W. Malo.            | St. Paul.               | Joliette       | W M.        | Joliette.            | C.P.R.    | 63.0 | 52.5  | 57.0  | 55.3  |
| Neveu & Tessier.    | Kildare.                | Joliette       | P.          | Joliette.            | C.N.Q.R.  | 63.0 | 56.0  | ..... | ..... |
| J. B. Lalonde.      | St. Monique.            | Two Mountains. | 1065.       | St. Augustin.        | C.P.R.    | 63.0 | 62.6  | ..... | ..... |
| J. St. Martin.      | St. Louis de Bonsecours | Richelieu.     | W P 15.     | St. Louis.           | Q.M.S.R.  | 63.2 | 63.0  | ..... | ..... |
| Hercule Leclerc.    | Portneuf                | Portneuf.      | A 597.      | Portneuf.            | C.N.Q.R.  | 63.3 | ..... | 61.5  | ..... |
| A. Girard.          | St. Valerien.           | Shelford.      | HBR 23.     | Upton.               | G.T.R.    | 63.3 | ..... | 58.0  | 58.0  |
| Ludger Lecompte.    | St. François.           | Montmagny      | E & C 13.   | St. François.        | I.C.R.    | 63.5 | 62.5  | 56.1  | 57.2  |
| H. J. Côté.         | St. Casimir.            | Portneuf.      | L A 25.     | St. Casimir          | C.N.Q.R.  | 63.5 | 58.0  | ..... | 61.0  |
| Odilon Gélinas.     | Charette.               | St. Maurice.   | OGG.        | Charette             | C.N.Q.R.  | 63.5 | 52.3  | 55.2  | 51.0  |
| Joseph Dufresne.    | St. Gabriel de B.       | Berthier.      | OD&S 110.   | St. Gabriel.         | C.P.R.    | 63.6 | 62.0  | 52.0  | ..... |
| E. Vézina.          | Notre Dame de Ham.      | Wolfe          | C P 45.     | Victoriaville        | G.T.R.    | 63.7 | ..... | ..... | ..... |
| Hector Larivière.   | St. Judes.              | St. Hyacinthe. | Crescent 2. | St. Judes.           | Q.M.S.R.  | 63.7 | ..... | ..... | 46.5  |
| E. Carrière.        | St. Gervais.            | Bellechasse    | R 222.      | St. Charles.         | I.C.R.    | 63.8 | 52.8  | ..... | ..... |
| Iréne Bergeron.     | St. Paul de Chester.    | Arthabaska     | H A 134     | Victoriaville.       | G.T.R.    | 64.0 | ..... | ..... | ..... |
| Therriault & Frère. | St. Alphonse.           | Joliette       | 36.         | Rawdon.              | C.N.Q.R.  | 64.0 | 58.2  | 53.5  | 55.0  |
| Louis Leblanc.      | St. Paul l'Ermite.      | L'Assomption.  | L L.        | St. Paul L'Ermite.   | C.N.Q.R.  | 64.0 | 60.0  | 66.0  | 59.0  |
| W. A. Oswald.       | Petit Brulé.            | Two Mountains. | Elite       | St. Augustin.        | C.P.R.    | 64.2 | 61.8  | ..... | ..... |
| Philias Lavallée.   | St. Gabriel de B.       | Berthier.      | HBR 72.     | St. Gabriel.         | C.P.R.    | 64.2 | ..... | 51.0  | 50.0  |
| Camille Bazinet.    | St. Zenon.              | Berthier.      | CB.         | St. Felix de Valois. | C.P.R.    | 64.2 | ..... | ..... | 51.5  |
| Fortin & Blanchet.  | Napierville.            | Napierville    | Napierville | .....                | .....     | 64.2 | ..... | ..... | ..... |
| L. Ovide Roy.       | St. Vallier.            | Bellechasse    | No 1.       | Napierville          | Nap Jct R | 64.2 | 57.3  | ..... | 60.0  |
| A. Lapointe.        | St. Paul.               | Joliette.      | A 600.      | St. Vallier.         | I.C.R.    | 64.5 | 64.5  | ..... | ..... |
| Albert Perrault.    | St. Judes.              | St. Hyacinthe. | A L.        | Joliette             | C.N.Q.R.  | 64.5 | 58.4  | 59.1  | 55.0  |
|                     |                         |                | Crescent 1. | St. Judes.           | Q.M.S.R.  | 64.6 | ..... | 62.7  | 63.5  |



TEMPERATURES OF QUEBEC AND ONTARIO BUTTER AT COUNTRY SHIPPING POINTS—Continued.

Average Temperature of Creamery Butter at Shipping Points in the Province of Quebec for seven years 1905 to 1911 inclusive:  
J. N. Lemieux, Inspector—Continued.

| Name of Proprietor<br>or<br>Manager. | Post Office Address.                | County.            | Marks.                  | Railway Shipping<br>Station. | Railway.   | YEARS. |       |       |       |       |       |       |
|--------------------------------------|-------------------------------------|--------------------|-------------------------|------------------------------|------------|--------|-------|-------|-------|-------|-------|-------|
|                                      |                                     |                    |                         |                              |            | 1911.  | 1910. | 1909. | 1908. | 1907. | 1906. | 1905. |
|                                      |                                     |                    |                         |                              |            | Deg.   | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  |
| J. A. Roy.....                       | St. Jean de Matha.....              | Joliette.....      | J A R.....              | St. Felix de Valois..        | C.P.R..... | 65.0   | 56.0  | 52.8  | ..... | ..... | 54.0  | ..... |
| Felix Bruneau.....                   | St. Melanie.....                    | Joliette.....      | F B.....                | St. Felix de Valois..        | C.P.R..... | 65.0   | 65.0  | 56.0  | ..... | ..... | ..... | ..... |
| J. A. Allaire.....                   | St. Roch L'Achigan..                | L'Assomption.....  | J A A No. 1.<br>Morning | L'Epiphanie.....             | C.N.Q.R..  | 65.0   | 59.0  | 59.6  | 62.8  | 56.0  | ...   | ..... |
| Rodolphe St. Jean.....               | St. Barnabé.....                    | St. Hyacinthe..... | Star.....               | St. Barnabé.....             | Q.M.S.R..  | 65.0   | ..... | ..... | ..... | ..... | ..... | ..... |
| Sam Pellerin.....                    | Kildare.....                        | Joliette.....      | S P.....                | Joliette.....                | C.P.R..... | 65.5   | 53.5  | 52.5  | 54.3  | 55.0  | ..... | ..... |
| Philippe Vadnais.....                | Rougemont.....                      | Rouville.....      | 12.....                 | Rougemont.....               | Q.M.S.R..  | 65.5   | 65.0  | 60.5  | 63.0  | 50.0  | 51.6  | 53.6  |
| Hardy Frères & Cie.....              | St. Angelique.....                  | Portneuf.....      | H F & Cie..             | St. Basile.....              | C.P.R..... | 65.6   | ..... | ..... | ..... | 63.0  | ..... | ..... |
| H. Bergeron.....                     | St. Paulin.....                     | Maskinongé.....    | S T 37.....             | St. Paulin.....              | C.N.Q.R..  | 66.0   | 63.7  | 58.6  | 56.0  | 51.5  | 66.3  | ..... |
| Frs. Robitaille.....                 | St. Damien.....                     | Berthier.....      | F R.....                | St. Gabriel.....             | C.P.R..... | 66.3   | 56.5  | 51.0  | 55.8  | 54.8  | ..... | ..... |
| Eugène Desrochers.....               | St. Charles du Monde-<br>ville..... | Montcalm.....      | F P.....                | St. Gabriel.....             | C.P.R..... | 66.5   | 62.5  | 52.0  | ..... | 52.0  | ..... | ..... |
| East & Cie.....                      | St. Augustin.....                   | Portneuf.....      | E.....                  | St. Augustin.....            | C.N.Q.R..  | 66.5   | ..... | ..... | ..... | ..... | ..... | ..... |
| W. Boucher.....                      | St. Barnabé.....                    | St. Maurice.....   | D G.....                | Charrette.....               | C.N.Q.R..  | 66.6   | 62.2  | 59.3  | 61.6  | ..... | ..... | ..... |
| Frs. Ledoux.....                     | St. Damase.....                     | St. Hyacinthe..... | T & T Canada            | St. Damase.....              | Q.M.S.R..  | 67.0   | ..... | ..... | ..... | ..... | ..... | ..... |
| Anselme Plante.....                  | St. Felix de Valois..               | Joliette.....      | O D & S 73.             | St. Felix de Valois..        | C.P.R..... | 67.0   | 60.0  | ..... | ..... | ..... | ..... | ..... |
| Edouard Desrosiers.....              | St. Felix de Valois..               | Joliette.....      | H B H 16...             | St. Felix de Valois..        | C.P.R..... | 67.0   | 57.6  | ..... | ..... | ..... | ..... | ..... |
| M. Bourassa.....                     | St. Barnabé.....                    | St. Maurice.....   | M B.....                | Charrette.....               | C.N.Q.R..  | 68.0   | 64.0  | ..... | ..... | ..... | ..... | ..... |
| J. A. Heroux.....                    | St. Elie de Caxton..                | St. Maurice.....   | J A M 19...             | Charrette.....               | C.N.Q.R..  | 68.0   | 61.3  | ..... | ..... | ..... | ..... | ..... |
| Ulric Olivier.....                   | St. Thomas.....                     | Joliette.....      | X 24.....               | St. Thomas.....              | C.P.R..... | 68.0   | ..... | ..... | ..... | ..... | ..... | ..... |
| Alberic Olivier.....                 | St. Thomas.....                     | Joliette.....      | 250.....                | St. Thomas.....              | C.P.R..... | 68.0   | ..... | ..... | ..... | ..... | ..... | ..... |
| Geo. Plourde.....                    | Chacoura.....                       | Maskinongé.....    | O G 43.....             | St. Paulin.....              | C.N.Q.R..  | 68.5   | ..... | ..... | ..... | ..... | ..... | ..... |
| Philias Allard.....                  | St. Alexis des Monts                | Maskinongé.....    | J A M 18...             | St. Paulin.....              | C.N.Q.R..  | 68.5   | 63.0  | 60.2  | 60.0  | 51.5  | 66.3  | ..... |
| J. E. Grenier.....                   | Hunterstown.....                    | Maskinongé.....    | O G 12.....             | St. Paulin.....              | C.N.Q.R..  | 69.0   | 62.5  | 61.4  | 62.6  | ..... | ..... | ..... |
| J. G. Bédard.....                    | Paré.....                           | Portneuf.....      | L A 7.....              | Lachevrotière.....           | C.N.Q.R..  | 69.0   | ..... | ..... | ..... | ..... | ..... | ..... |
| J. R. Coutu.....                     | St. Gabriel de B.....               | Berthier.....      | J R Coutu..             | St. Gabriel.....             | C.P.R..... | 70.5   | 66.0  | 54.3  | 57.8  | 55.3  | 58.6  | ..... |
| S. Boulrice.....                     | St. Edouard.....                    | Napierville.....   | S B.....                | St. Edouard.....             | Nap Jet R  | 71.0   | 65.0  | ..... | ..... | ..... | ..... | ..... |



SESSIONAL PAPER No. 15a

TEMPERATURES OF QUEBEC AND ONTARIO BUTTER AT COUNTRY SHIPPING POINTS—Continued.  
Average Temperatures of Creamery Butter at Shipping Points in the Province of Quebec for Seven Years, 1905 to 1911 inclusive,  
F. A. Knowlton, Inspector.

| Name of Proprietor<br>or<br>Manager. | Post Office Address.       | Marks.               | Railway Shipping<br>Station. | Railway.            | YEARS. |       |       |       |       |       |       |
|--------------------------------------|----------------------------|----------------------|------------------------------|---------------------|--------|-------|-------|-------|-------|-------|-------|
|                                      |                            |                      |                              |                     | 1911.  | 1910. | 1909. | 1908. | 1907. | 1906. | 1905. |
|                                      |                            |                      |                              |                     | Deg.   | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  | Deg.  |
| G. G. Griggs.....                    | Mansonville.....           | Green Valley.....    | Mansonville.....             | O. M. & C. P. ....  | 44.0   | 47.1  | 45.0  | 46.5  | 48.5  | 51.2  | 52.7  |
| Mennier.....                         | Granby.....                | M. 6.....            | Granby.....                  | C. V. R.....        | 44.0   | 45.0  | 45.2  | 45.5  | 47.9  | 51.2  | 52.5  |
| J. Labelle.....                      | Vale Perkins.....          | Vale Perkins.....    | Mansonville.....             | O. M. & C. P. ....  | 44.8   | 45.0  | 45.2  | 45.5  | 47.9  | 51.2  | 52.5  |
| W. K. Baldwin.....                   | Baldwin's Mills.....       | B. M.....            | Coaticook.....               | G. T. R.....        | 46.0   | 48.6  | 52.5  | 54.0  | 43.6  |       |       |
| D. W. Leblanc.....                   | Bedford.....               | Silver Star.....     | Bedford.....                 | C. P. R.....        | 46.7   |       |       |       |       |       |       |
| A. R. Lebine.....                    | Holton.....                | A. P. Lebine.....    | St. Remi.....                | G. T. R.....        | 47.3   | 54.5  | 50.0  | 55.5  | 53.5  | 48.3  | 49.4  |
| S. Raboin.....                       | Smith's Mills.....         | Griffin's C.....     | Coaticook.....               | B. M. & C. P. R.... | 47.5   |       | 49.5  |       |       |       |       |
| John McCrum.....                     | St. Edwidge de Clifton ..  | Maple Leaf .....     | Coaticook.....               | G. T. R.....        | 47.6   | 50.8  | 65.5  | 51.8  | 51.4  |       |       |
| E. B. Dupuis.....                    | Iron Hill.....             | Crown.....           | West Shefford ..             | C. P. R.....        | 48.2   | 46.5  | 47.9  | 49.2  | 45.5  | 43.9  | 43.3  |
|                                      | Coaticook.....             | S. B. No. 1.....     | Coaticook.....               | G. T. R.....        | 48.6   | 52.6  | 46.6  | 55.0  | 36.6  |       |       |
|                                      | Dixville.....              | Dale 6.....          | Dixville.....                | G. T. R.....        | 49.0   |       |       |       |       |       |       |
| L. Ladouceur.....                    | St. Edwidge de Clifton ..  | Rose 11.....         | Coaticook.....               | G. T. R.....        | 49.3   | 45.5  | 46.0  | 51.8  | 39.5  |       |       |
| H. R. Standish.....                  | Magog.....                 | Magog Creamery.....  | Magog.....                   | B. & M. & C. P. R.. | 49.3   | 47.4  | 46.9  | 47.3  | 45.5  | 48.0  | 47.3  |
| Bureau & Gilbert.....                | Compton.....               | Canada A. 2.....     | Compton.....                 | G. T. R.....        | 49.5   | 47.2  | 45.0  | 57.4  | 49.6  |       |       |
| F. Bouchard.....                     | Eastman.....               | Silver Lake.....     | Eastman.....                 | O. M. & C. P. R.... | 49.5   | 45.3  | 44.0  | 44.0  | 50.0  | 44.1  | 51.1  |
| Raboin & Raboin.....                 | Compton.....               | Compton.....         | Compton.....                 | G. T. R.....        | 49.6   | 48.6  | 56.2  | 53.6  | 49.8  | 42.6  | 43.3  |
| E. Sharkey.....                      | Cherry River.....          | Mount Orford.....    | Magog.....                   | B. & M. & C. P. R.. | 49.7   | 46.2  | 47.0  | 51.1  | 48.5  |       |       |
| J. Leclair.....                      | Foster.....                | Foster C.....        | Foster.....                  | C. P. R.....        | 50.2   | 54.0  |       |       |       |       |       |
| M. Lapaline.....                     | Granby.....                | Pauline.....         | Granby.....                  | C. V. R.....        | 50.5   | 61.0  |       |       |       |       |       |
| Rev. A. Tremblay.....                | St. Hermenegilde de B..... | Canada A. 40.....    | Coaticook.....               | G. T. R.....        | 50.6   | 47.1  | 49.0  | 53.1  | 41.5  | 45.3  | 47.4  |
| L. Caron.....                        | Katevale.....              | T. & T. 546.....     | Magog.....                   | B. & M. & C. P. R.. | 51.1   | 49.3  | 49.0  | 54.2  | 50.5  | 51.8  | 56.3  |
| M. Riders.....                       | Fitch Bay.....             | Fitch B. C.....      | Smith's Mills.....           | B. & M. & C. P. R.. | 52.0   | 50.0  | 48.5  | 48.8  | 46.7  | 51.5  | 49.0  |
| W. Chapin.....                       | Shefford Mountain.....     | Shefford Mt. C.....  | Granby.....                  | C. V. R.....        | 52.0   |       |       |       |       |       |       |
|                                      |                            |                      | St. Sabine.....              | C. P. R.....        | 52.0   |       |       |       |       |       |       |
| W. R. Tannerhill.....                | Ormstown.....              | Aberdeen 1.....      | Ormstown.....                | G. T. R.....        | 52.0   | 54.0  |       |       |       |       |       |
| E. H. Hunter.....                    | Stanbridge East.....       | Stanbridge East..... | Stanbridge East.....         | C. V. R.....        | 52.0   |       | 47.6  | 50.9  | 43.5  |       |       |
| W. W. Reed.....                      | North Hatley.....          | W. W. Reed.....      | North Hatley.....            | B. & M. & C. P. R.. | 52.3   | 45.3  | 49.0  |       | 41.9  | 43.2  | 47.5  |
| H. Archambault.....                  | Farnham.....               | Rapid River.....     | Farnham.....                 | C. V. R.....        | 52.3   | 49.0  |       |       |       |       |       |
| Juaire & Dussault.....               | Knowlton.....              | Knowlton C.....      | Knowlton.....                | C. P. R.....        | 52.7   | 46.8  | 48.1  | 48.5  | 46.2  | 49.8  | 47.1  |
| E. McGowan.....                      | St. Martine.....           | E 44.....            | St. Martine.....             | G. T. R.....        | 53.0   | 53.0  |       |       |       |       |       |
| Z. Lawrence.....                     | West Shefford.....         | W. S. Creamery.....  | W. Shefford.....             | C. P. R.....        | 53.1   |       | 49.5  | 50.2  | 46.6  | 47.7  | 47.1  |
| H. Purdy.....                        | Melboro.....               | Melboro.....         | Kingsbury.....               | O. M. & C. P. R.... | 53.1   | 49.2  | 51.0  | 47.5  | 48.8  | 48.5  |       |







SESSIONAL PAPER No. 15a

|                    |                   |                    |                    |              |       |       |       |       |       |
|--------------------|-------------------|--------------------|--------------------|--------------|-------|-------|-------|-------|-------|
| R. E. Scott.....   | St. Joachim.....  | Maple Grove.....   | South Roxton ..... | C. P. R..... | ..... | ..... | ..... | ..... | ..... |
| L. J. Poupart..... | St. Remi.....     | Maple Leaf.....    | St. Remi.....      | G. T. R..... | ..... | ..... | ..... | ..... | ..... |
| Chicoine.....      | Versailles.....   | F. & M. 75.....    | Versailles.....    | C. V. R..... | ..... | ..... | ..... | ..... | ..... |
| L. J. Poupart..... | St. Isidore.....  | J. J. P. 1171..... | St. Isidore.....   | G. T. R..... | ..... | 55.5  | ..... | 53.0  | 61.3  |
| J. B. Primeau..... | St. Martine.....  | G. 370.....        | St. Martine.....   | G. T. R..... | ..... | ..... | ..... | ..... | ..... |
| C. E. Rivest.....  | Sherrington ..... | R.....             | Sherrington .....  | G. T. R..... | ..... | ..... | ..... | ..... | ..... |
|                    |                   |                    |                    |              | 60.0  | ..... | ..... | ..... | ..... |
|                    |                   |                    |                    |              | 61.3  | ..... | ..... | ..... | ..... |
|                    |                   |                    |                    |              | 62.5  | ..... | ..... | ..... | ..... |
|                    |                   |                    |                    |              | 63.2  | ..... | ..... | ..... | ..... |
|                    |                   |                    |                    |              | 63.3  | ..... | ..... | ..... | ..... |
|                    |                   |                    |                    |              | 64.3  | ..... | ..... | ..... | ..... |



3 GEORGE V., A. 1913

Average Temperatures of Creamery Butter at Shipping Points in the Province of Ontario, Season 1911.—(Inspector H. G. Shufelt.)

| Proprietor or Manager.  | Post Office Address. | Railway Shipping Stations. | Railway. | No. of Packages Tested. | Average Temperature. |
|-------------------------|----------------------|----------------------------|----------|-------------------------|----------------------|
|                         |                      |                            |          |                         | Deg.                 |
| John Logie.....         | Paisley. ....        | Paisley.....               | G.T.R.   | 7                       | 44·9                 |
| Forest Creamery Co..... | Forest .....         | Forest .....               | "        | 7                       | 46·3                 |
| Lang & Cunningham.....  | Harrow.....          | Harrow.....                | P.M.R.   | 6                       | 48·5                 |
| A. Aldrich.....         | Selkirk.....         | Nelles Corners....         | G.T.R.   | 10                      | 51·4                 |
| R. H. Newman.....       | East Oro.....        | Orillia.....               | "        | 6                       | 52·5                 |
| John H. Scott.....      | Exeter.....          | Exeter.....                | "        | 7                       | 53·1                 |
| W. Kaufman.....         | Hagersville.....     | Hagersville.....           | "        | 9                       | 54·7                 |
| Wm. Newman .....        | Lorneville.....      | Lorneville Jct.....        | "        | 6                       | 55·2                 |
| W. G. Medd.....         | Exeter.....          | Exeter.....                | "        | 16                      | 56·8                 |
| Bluevale C. Co.....     | Bluevale.....        | Bluevale.....              | "        | 9                       | 57·2                 |
| D. Aldrich.....         | Tiverton.....        | Kincardine.....            | "        | 9                       | 57·2                 |
| T. A. Stevens.....      | Wheatley.....        | Wheatley.....              | P.M.R.   | 11                      | 57·3                 |
| R. A. Thomas.....       | Beeton.....          | Beeton.....                | G.T.R.   | 4                       | 58·3                 |
| A. G. Calder.....       | Seaforth.....        | Seaforth.....              | "        | 7                       | 59·3                 |
| A. A. Keillion.....     | Dutton.....          | Dutton.....                | P.M.R.   | 7                       | 59·6                 |
| W. B. Kent.....         | Delhi.....           | Delhi.....                 | G.T.R.   | 4                       | 60·8                 |
| C. E. Birkett.....      | West Lorne.....      | .....                      | P.M.R.   | 7                       | 61·1                 |
| Valleau & Coukell.....  | Gooderham.....       | Lindsay.....               | G.T.R.   | 5                       | 61·8                 |
| L. O. Jackson.....      | Mitchell.....        | Mitchell.....              | "        | 4                       | 63·3                 |
| J. J. Parsons.....      | Jarvis.....          | Jarvis .....               | "        | 7                       | 70·4                 |

Temperatures of Ontario and Quebec Butter at Shipping Points and at Montreal, Season 1911.

|   | Number of Cars with Marked Packages. | No. of Packages tested at Shipping Points and at Montreal. | Average Temperature at Shipping Points. | Average Temperature at Montreal. | Increase in Temperature. | Reduction in Temperature. |
|---|--------------------------------------|--|---|----------------------------------|--------------------------|---------------------------|
|   |                                      |  | Deg.                                    | Deg.                             | Deg.                     | Deg.                      |
| Ontario via C.P.R.....                        | 2                                    | 7  | 45·6                                    | 49·4                             | 3·8                      | .....                     |
| " G.T.R.....                                  | 4                                    | 42   | 60·6                                    | 53·6                             | .....                    | 7·0                       |
| " P.M.R.....                                  | 1                                    | 4  | 64·0                                    | 55·5                             | .....                    | 8·5                       |
| Quebec (north of St. Lawrence) via C.P.R....  | 7                                    | 169  | 56·7                                    | 55·7                             | .....                    | 1·0                       |
| Quebec (south of St. Lawrence) via C.P.R..... | 28                                   | 173  | 52·5                                    | 52·5                             | .....                    | .....                     |
| Quebec via I.C.R.....                         | 9                                    | 202  | 54·9                                    | 53·9                             | .....                    | 1·0                       |
| " G.T.R.....                                  | 11                                   | 142  | 55·3                                    | 57·8                             | 2·5                      | .....                     |
| " Q.M. & S.R.....                             | 3                                    | 65   | 57·9                                    | 59·3                             | 1·4                      | .....                     |
| " Q.C.R.....                                  | 1                                    | 50   | 53·4                                    | 52·9                             | .....                    | 0·5                       |
| " C.N.Q.R.....                                | 4                                    | 24   | 63·1                                    | 61·7                             | .....                    | 1·4                       |
| " C.V.R.....                                  | 4                                    | 47   | 55·0                                    | 55·6                             | 0·6                      | .....                     |
| Totals.....                                   | 74                                   | 925  | .....                                   | .....                            | .....                    | .....                     |
| General Average.....                          |                                      |  | 55·6                                    | 55·3                             | .....                    | 0·3                       |
| Season 1910, general average.....             |                                      |  | 54·5                                    | 53·8                             | .....                    | 0·7                       |
| " 1909 .....                                  |                                      |  | 52·6                                    | 51·7                             | .....                    | 0·9                       |
| " 1908 .....                                  |                                      |  | 54·9                                    | 54·4                             | .....                    | 0·5                       |
| " 1907 .....                                  |                                      |  | 51·3                                    | 50·5                             | .....                    | 0·8                       |
| " 1906 .....                                  |                                      |  | 52·6                                    | 53·2                             | 0·6                      | .....                     |
| " 1905 .....                                  |                                      |  | 54·4                                    | 54·5                             | 0·1                      | .....                     |



## SESSIONAL PAPER No. 15a

Comparative Temperatures of Butter for the past Seven Years when delivered to the steamers at Montreal and unloaded at the Port of Discharge in Great Britain

|                         | No.<br>of<br>Pkgs.<br>Tested. | Average<br>Temperature<br>at<br>Montreal. | Average<br>Temperature<br>at<br>Port of<br>Discharge. | Average<br>Increase in<br>Temperature<br>during<br>Voyage. | Average<br>Reduction in<br>Temperature<br>during<br>Voyage. |
|-------------------------|-------------------------------|---|---|--|---|
|                         |                               | Deg.                                      | Deg.  | Deg.   | Deg.  |
| Montreal to Liverpool—  |                               |   |   |  |   |
| Season 1905.....        | 843                           | 39·3                                      | 24·9  | .....  | 14·4  |
| " 1906.....             | 456                           | 39·2                                      | 21·4  | .....  | 17·8  |
| " 1907.....             | 183                           | 33·7                                      | 23·1  | .....  | 10·6  |
| " 1908.....             | 86                            | 37·5                                      | 25·0  | .....  | 12·5  |
| " 1909.....             | 43                            | 37·6                                      | 25·7  | .....  | 11·9  |
| " 1910.....             | 58                            | 35·7                                      | 22·1  | .....  | 13·6  |
| " 1911.....             | 183                           | 35·5                                      | 24·1  | .....  | 11·4  |
| Montreal to London—     |                               |   |   |  |   |
| Season 1905.....        | 859                           | 40·2                                      | 26·6  | .....  | 13·6  |
| " 1906.....             | 527                           | 41·7                                      | 20·5  | .....  | 21·2  |
| " 1907.....             | 217                           | 36·2                                      | 15·3  | .....  | 20·9  |
| " 1908.....             | 153                           | 39·6                                      | 18·2  | .....  | 21·4  |
| " 1909.....             | 87                            | 36·3                                      | 22·9  | .....  | 13·4  |
| " 1910.....             | 46                            | 33·2                                      | 17·2  | .....  | 16·0  |
| " 1911.....             | 113                           | 38·2                                      | 22·8  | .....  | 15·4  |
| Montreal to Bristol—    |                               |   |   |  |   |
| Season 1905.....        | 607                           | 36·9                                      | 23·9  | .....  | 13·0  |
| " 1906.....             | 361                           | 36·9                                      | 23·9  | .....  | 13·0  |
| " 1907.....             | 186                           | 35·4                                      | 22·9  | .....  | 12·5  |
| " 1908.....             | 226                           | 35·3                                      | 23·5  | .....  | 11·8  |
| " 1909.....             | 148                           | 31·5                                      | 21·3  | .....  | 10·2  |
| " 1910.....             | 207                           | 29·5                                      | 21·8  | .....  | 7·7   |
| " 1911.....             | 340                           | 35·5                                      | 26·3  | .....  | 9·2   |
| Montreal to Glasgow—    |                               |   |   |  |   |
| Season 1905.....        | 403                           | 35·8                                      | 28·7  | .....  | 7·1   |
| " 1906.....             | 374                           | 35·0                                      | 24·1  | .....  | 10·9  |
| " 1907.....             | 183                           | 35·9                                      | 19·2  | .....  | 16·7  |
| " 1908.....             | 75                            | 35·0                                      | 23·9  | .....  | 11·1  |
| " 1909.....             | 79                            | 32·4                                      | 22·7  | .....  | 9·7   |
| " 1910.....             | 35                            | 31·9                                      | 23·7  | .....  | 8·2   |
| " 1911.....             | 74                            | 33·3                                      | 25·9  | .....  | 7·4   |
| Montreal to Manchester— |                               |   |   |  |   |
| Season 1905.....        | 87                            | 34·4                                      | 30·4  | .....  | 4·0   |
| " 1906.....             | 33                            | 41·2                                      | 38·8  | .....  | 2·4   |
| " 1907.....             | 7                             | 40·9                                      | 34·0  | .....  | 6·9   |
| " 1908.....             | .....                         | .....                                     | .....   | .....  | .....   |
| " 1909.....             | 11                            | 28·8                                      | 33·5  | 4·7  | .....   |
| " 1910.....             | 5                             | 35·2                                      | 32·0  | .....  | 3·2   |
| " 1911.....             | .....                         | .....                                     | .....   | .....  | .....   |

## THE CHEESE TRADE.

By the end of March the export cheese trade for the season of 1911-12 was practically at an end and although the total quantity exported was somewhat less than in the preceding fiscal year, the value was greater owing to higher prices. According to our statement of weekly prices, the lowest quotation for cheese in Montreal during the year was 10½c. at the end of May, 1911, and the highest 15½c. on January 10, 1912. In New York the range for 'Fancy Whole Milk, Coloured' was from 11¼c. in June and July, 1911, to 18¾c. in March, 1912.

The annual reports of the cargo inspectors in Great Britain, which appear on pages 46 to 61, while clearly indicating that Canadian cheese continues in good repute in the old country markets, also reflect a few drawbacks which are hampering the trade. Prominent among these is the perennial complaint *re* broken boxes which has been a bugbear of the export trade for years and which is still awaiting solution.



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As this matter is treated at some length in the reports of the inspectors I do not propose to take up space with it here beyond quoting an extract from a regular cargo report received from our Glasgow inspector in December last which deals with the condition of the boxes in a consignment of cheese landed by a Montreal steamer about the end of November.

EXTRACT FROM GLASGOW CARGO INSPECTOR'S REPORT.

'The cheese from this steamer arrived in good condition but the boxes were landed in a disgraceful state, owing largely to ill-fitting or poor quality boxes; C.S. brand were exceedingly bad and most factories had poor slim boxes or irregular in fit, many being too large for cheese either in width or depth.

|             |     |                  |                 |     |                          |
|-------------|-----|------------------|-----------------|-----|--------------------------|
| C.S.        | 634 | Rosevale No. 2   | out of 25 boxes | 9   | were tied and 10 broken. |
| "           | 635 | Golden 1         | " 18 "          | 7   | " 4 "                    |
| "           | 636 | Templeton No. 3  | " 20 "          | 7   | " 5 "                    |
| "           | 637 | J. B. C.         | " 23 "          | 8   | " 5 "                    |
| "           | 638 | Templeton No. 2  | " 25 "          | 7   | " 6 "                    |
| "           | 639 | Rosevale Factory | " 26 "          | 14  | " 5 "                    |
| "           | 640 | Templeton No. 1  | " 20 "          | 8   | " 7 "                    |
| "           | 642 | J. B. 4          | " 31 "          | 23  | " 8 "                    |
| "           | 646 | Louisa Factory   | " 21 "          | 4   | " 4 "                    |
| "           | 648 | C. P. 10         | " 33 "          | 11  | " 7 "                    |
| "           | 649 | C. P. 21         | " 24 "          | 7   | " 3 "                    |
| Totals..... |     |                  |                 | 286 | 105 64                   |

The tied boxes mean those that were broken when they reached the ship's side at Montreal and were there bound with rope so that they would carry to destination

The percentage of breakage in the above consignment was 59 per cent and it will be noticed that the causes assigned by the inspector for the bulk of the breakage were ill-fitted boxes and poor quality of material.

CHEESE TRANSPORTATION.

The fact that the weather in July and August was exceedingly hot was responsible for a greater demand than usual for refrigerator cars and our returns from the railway companies show that more iced cars were used in the cheese traffic during the summer of 1911 than in any previous year. It is now generally agreed that the cool transportation of cheese is attended by beneficial results and it is in the interests of factorymen, and of every one connected with the industry in fact, that all shipments of cheese going forward during warm weather should be carried in refrigerator cars. It is, of course, essential that each car should be properly iced as, without ice in the bunkers, a refrigerator car is the worst possible place for cheese in hot weather.

Ideal conditions for export cheese would include cool curing rooms in the factories, iced refrigerator cars on the railways and cooled air accommodation in the steamships. The latter two conditions are practically available now for every shipper and the movement for cool curing rooms is making headway.

THE FRUIT TRADE.

The outstanding feature of the Canadian fruit trade during the season of 1911-12 was the huge apple crop in Nova Scotia, reaching almost one and three quarter million barrels or more than twice as much as in any previous year. In view of the enormously increased production, growers, shippers and transportation companies are to be congratulated on the manner in which the crop was handled and distributed.



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The following statement shows the total quantity shipped to the various markets abroad and also an estimate of the quantity sold in Western Canada and in the local markets in the Maritime Provinces.

SHIPMENTS OF APPLES FROM NOVA SCOTIA, 1911-12.

| Shipped to—                         | Barrels.  | Half Barrels. | Boxes. |
|-------------------------------------|-----------|---------------|--------|
| London.....                         | 783,115   | 2,010         | 4,518  |
| Liverpool.....                      | 241,080   | 55            | 612    |
| Glasgow.....                        | 163,317   | 2             | 2,769  |
| Hamburg.....                        | 116,112   |               | 547    |
| Bristol.....                        | 28,644    |               |        |
| Manchester.....                     | 21,090    |               |        |
| Hull.....                           | 17,547    |               |        |
| Newfoundland.....                   | 16,394    | 19            | 215    |
| South Africa.....                   | 5,368     |               | 1,350  |
| Boston.....                         | 5,250     |               |        |
| West Indies.....                    | 3,831     |               |        |
| Netherlands.....                    | 1,821     |               |        |
| Havana.....                         | 775       |               |        |
|                                     | 1,404,344 |               |        |
| Western Canada (estimated).....     | 100,000   |               |        |
| Quebec and Ontario.....             | 76,150    |               |        |
| Maritime Provinces (estimated)..... | 150,000   |               |        |
| Total.....                          | 1,730,494 | 2,086         | 10,011 |
| Equal to 1,734,876 barrels.         |           |               |        |

It will be noted that Nova Scotian shippers invaded the Northwest market to the tune of 100,000 barrels, which was not too bad for a first attempt. On the whole the shippers were well pleased with their returns and they claim that they will cater regularly to that market in future.

EXPORT FRUIT TRADE.

An additional outlet for Canadian apples was afforded the past season by the demand for imported apples in Germany and the fact that the fiscal relations between that country and Canada are now once more in a normal condition. Owing to the heat and drought prevalent on the Continent last summer, the German apple crop was very poor and as a result large direct shipments have gone forward from Halifax to Hamburg. While apples are widely grown in Germany general climatic conditions, except in a few districts in the south, are unfavourable for the production of high class fruit and, as a rule, that country is a large importer of apples, the market varying, of course, according to the size of the home crop and the prosperity of the people. During the four years 1907 to 1910 inclusive the average yearly importation of apples into Germany was the equivalent of 2,548,813 barrels. The major portion of their supply, however, is imported in bulk from the neighbouring countries of Austria-Hungary, Switzerland and Italy, and is admitted free of duty up to November 30. After that date the tariff is 21 cents per hundred pounds compared with 34 cents per hundred pounds on apples from Canada at any time of the year. There is a good demand in Germany for a limited quantity of high grade apples packed in boxes but the quality must be strictly "fancy" and the packing first class. The Pacific States have been shipping boxed apples to Germany since 1909 and the growers are properly jealous of the fine reputation they have obtained in that market. Their carefulness in this respect is well illustrated by what was told me by a gentleman who recently returned



from a visit to Oregon. When he was in Hood River the manager of the Co-Operative Apple Grower's Association there showed him an order from Germany for a car (630 boxes) of Spitz and a car of Newtown Pippins at \$2 per box f.o.b., Hood River, and a draft for the amount was enclosed with the order. The crop was light in that section, however, and the manager did not consider he had the right stock on hand to fill the order so he returned the money with a letter of explanation. Many of our apple shippers, if afforded a similar opportunity, would have kept the money, shipped the best stock they had—and sent the letter of explanation later.

The following table shows the quantity and value of apples exported from Canada in the years ended March 31, 1904 to 1912, inclusive:—

| Year ended March 31. | Barrels.  | Values.   |
|----------------------|-----------|-----------|
| 1904 .....           | 1,577,285 | 4,529,500 |
| 1905 .....           | 977,483   | 2,551,474 |
| 1906 .....           | 1,280,789 | 4,217,704 |
| 1907 .....           | 998,618   | 2,702,623 |
| 1908 .....           | 1,629,400 | 4,823,645 |
| 1909 .....           | 1,092,090 | 2,804,282 |
| 1910 .....           | 1,604,477 | 4,417,926 |
| 1911 .....           | 523,653   | 1,756,884 |
| 1912 .....           | 1,664,165 | 5,104,107 |

TARIFFS ON FRESH APPLES.

As I am sometimes asked for the rate of duty imposed by different countries in which Canadian apples are sold, it may be useful if I quote herewith the tariffs in the countries named:—

- Germany.....34.6 cents per 100 pounds.
- Netherlands.....5 per cent ad valorem.
- Italy.....11.4 cents per 100 pounds
- South Africa.....Free.
- Newfoundland.....50 cents per barrel.
- Bahamas.....61 cents per barrel.
- Bermudas.....Free.
- Cuba.....27.27 cents per 100 pounds and 30 per cent surtax.
- Jamaica.....16½ per cent ad valorem.
- United States.....25 cents per bushel.

The shipment of Canadian peaches to Great Britain, the practicability of which was demonstrated by this Department in 1910, was continued in 1911 by private shippers, about four thousand single layer cases going forward in September and October. The fruit was shipped to Montreal mainly by refrigerator car and fast freight and it was carried in refrigerator chambers in the steamships at a temperature of about 36°. The peaches were landed in first class condition and realized remunerative prices.

Respectfully submitted,  
W. W. MOORE,  
Chief Markets Division.



## APPENDIX III.

## REPORT ON THE WORK OF THE FRUIT DIVISION.—(By A. McNeill, Chief.)

SIR,—I beg leave to present my report for the year ending March 31, 1912.

## THE STAFF.

The staff remains the same this year as last, with one additional permanent inspector and three additional temporary men, making thirteen permanent inspectors and twenty temporary inspectors.

Mr. G. H. Vroom has general oversight of the work in the maritime provinces. Mr. T. A. Peters has been working in Prince Edward Island during the whole year. Five temporary inspectors were located in Nova Scotia this season working, for the most part, at the docks in Halifax. In addition to these, it was deemed expedient to appoint Messrs. G. H. Shufelt and J. L. Cook, cargo inspectors, as temporary fruit inspectors for the season. This enabled them not only to fulfil their duties as cargo inspectors, but to devote their spare time to helping on the docks, for which work they were well qualified. For the second season, 4 coopers were appointed as helpers to open and close barrels. This very greatly increased the amount of work the inspectors could do, as it relieved them of much purely mechanical work in connection with the inspections, and insured the greatest possible care in handling the fruit and packages.

A temporary inspector has been working for the season in New Brunswick, chiefly at the port of St. John.

A temporary inspector was located at Quebec and worked from Montreal eastward through the province. Messrs. F. L. Dery, John McCabe and E. H. Wartman are located at Montreal; they are assisted during the shipping season by two or three temporary inspectors, depending upon the rush of work. Four helpers are also employed at Montreal during the shipping season.

Col. W. W. Brown was designated Senior Inspector at Montreal and Lake Ontario points. During the early part of the season he was assisted by one temporary inspector. At the close of the shipping season in Montreal, the inspectors located there, with the exception of Mr. Dery, were moved to the warehouses in the Lake Ontario District, where they continued to work until the close of the packing season in March.

Mr. P. J. Carey is located in Toronto. The greater part of his time is given to instruction work in packing, and in addressing meetings on general fruit subjects.

During the orchard packing season, a temporary inspector was employed in the Niagara District, one along the north shore of Lake Erie, and another in the Lake Huron counties.

The Georgian Bay district was covered by Mr. A. Gifford in the early part of the season and, later, by Mr. G. B. Carnahan. A temporary inspector was employed at Port Arthur and Fort William, who paid visits to Sault Ste. Marie, Kenora and other points in the district.

A permanent inspector, Mr. Chris. Campbell, was located at Winnipeg, and was assisted by a temporary inspector, with the result that the province was fairly well covered.

Two temporary inspectors were appointed for work in Saskatchewan, with headquarters at Regina and Saskatoon.

Inspector M. P. McNeill is permanently located at Calgary, and his territory covers the distributing points north and east. A temporary inspector was located at Lethbridge, working not only in the city but in the surrounding district.



Three officers of the Customs Department, Messrs Bunyan, Cook and McLeod, act as fruit inspectors and look after the fruit coming into Nelson, Grand Forks and Prince Rupert respectively. Mr. D. M. Robertson, a permanent inspector, is located at Vancouver, visiting Victoria and all important points on the southern mainland.

INSPECTION STATISTICS.

The following table gives comparative statements of the number of lots inspected, and the number of packages inspected for the seasons 1908-09, 1909-10, 1910-11 and 1911-12.

| Variety.                  | No.<br>of Lots.<br>Inspected. | No. of pkgs.<br>in Lots<br>Inspected. | No.<br>of pkgs.<br>Inspected. |
|---------------------------|-------------------------------|---------------------------------------|-------------------------------|
| 1908-09.                  |                               |                                       |                               |
| Apples..... Brls.         | 5,910                         | 682,657                               | 42,223                        |
| "..... Boxes.             | 248                           | 100,792                               | 2,701                         |
| Pears..... "              | 88                            | 54,150                                | 7,924                         |
| Peaches..... "            | 91                            | 140,976                               | 16,005                        |
| Plums..... Baskets.       | 54                            | 16,505                                | 1,474                         |
| Tomatoes..... "           | 53                            | 11,381                                | 779                           |
| Small fruits..... Quarts. | 863                           | 1,184,651                             | 154,874                       |
| 1909-10.                  |                               |                                       |                               |
| Apples..... Brls.         | 7,736                         | 859,572                               | 63,232                        |
| "..... Boxes.             | 902                           | 157,939                               | 7,363                         |
| Pears..... "              | 248                           | 41,459                                | 2,738                         |
| Peaches..... "            | 410                           | 60,248                                | 3,817                         |
| Plums..... Baskets.       | 264                           | 62,883                                | 4,257                         |
| Tomatoes..... "           | 149                           | 50,043                                | 3,241                         |
| Apricots..... Boxes.      | 11                            | 12,495                                | 481                           |
| Small fruits..... Quats.  | 2,491                         | 2,310,264                             | 240,751                       |
| 1910-11.                  |                               |                                       |                               |
| Apples..... Brls.         | 4,527                         | 360,768                               | 26,890                        |
| "..... Boxes.             | 1,347                         | 234,182                               | 9,829                         |
| "..... Baskets.           | 171                           | 17,551                                | 10,393                        |
| Pears..... Boxes.         | 371                           | 40,681                                | 2,750                         |
| Peaches..... "            | 11                            | 2,269                                 | 36                            |
| "..... Baskets.           | 383                           | 70,564                                | 5,932                         |
| Tomatoes..... "           | 56                            | 6,570                                 | 601                           |
| Plums..... "              | 189                           | 50,575                                | 5,144                         |
| Small fruits..... Quarts. | 1,502                         | 568,510                               | 155,048                       |
| 1911-12.                  |                               |                                       |                               |
| Apples..... Brls.         | 13,548                        | 1,085,300                             | 67,706                        |
| "..... Boxes.             | 1,235                         | 162,249                               | 10,178                        |
| Pears..... "              | 389                           | 32,252                                | 2,655                         |
| Peaches..... "            | 38                            | 9,487                                 | 263                           |
| "..... Baskets.           | 365                           | 34,606                                | 2,864                         |
| Plums..... "              | 336                           | 88,894                                | 7,554                         |
| Tomatoes..... "           | 66                            | 48,530                                | 2,012                         |
| Small fruits..... Quarts. | 2,120                         | 2,729,143                             | 293,591                       |

CONVICTIONS FOR ILLEGAL MARKING AND PACKING OF FRUIT.

The convictions under the Inspection and Sale Act, Part IX, have decreased again this year. This does not mean that the vigilance of the inspectors has been relaxed in any way, but points directly to an improvement in the packing and marking of fruit packages. The educative processes, particularly by means of the Inspec-



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tion and Sale Act, by fruit meetings, by organization into co-operative associations and by the general diffusion of helpful fruit literature, have all contributed to this happy result.

The following is a list of those who have been convicted during the season of 1911-12 of violation of the Inspection and Sale Act, Part IX:—

## ONTARIO—

|                       |              |
|-----------------------|--------------|
| C. F. Chase..         | Frankford.   |
| John Coyle..          | Colborne.    |
| J. N. Dalmas..        | Wooler.      |
| J. L. Denike..        | Prinyer.     |
| J. C. Dudley & Sons.. | Bowmanville. |
| W. C. Hazlitt..       | Adolphustown |
| William Hoar..        | Whitby.      |
| J. M. Hudgin..        | Picton.      |
| J. R. Jenkins..       | South Bay.   |
| Kelley Bros..         | Colborne.    |
| P. Mack..             | South Bay.   |
| Albert Mathers..      | Sarnia.      |
| R. Miller..           | Cressy.      |
| Howard McComb..       | Oron.        |
| C. Ostrander..        | South Bay.   |
| H. Putman..           | Northport.   |
| Roy Bros..            | Tyrone.      |
| R. K. Scott..         | Port Hope.   |
| R. S. Smythe..        | Oshawa.      |
| M. Storms..           | Cressy.      |
| Doney Thompson..      | South Bay.   |
| J. M. Thompson..      | Bagnor.      |
| William White..       | Sarnia.      |

## NOVA SCOTIA—

|                           |                          |
|---------------------------|--------------------------|
| T. B. Akin..              | Falmouth.                |
| Howard Bligh & Son..      | Halifax (2 convictions). |
| A. Curry..                | Falmouth.                |
| H. D'Almaine..            | Wolfville.               |
| G. C. DeWolf..            | New Minas.               |
| G. W. DeWolf..            | Three-Mile Plain.        |
| R. J. Graham..            | Windsor (3 convictions). |
| W. C. Hamilton..          | Grand Pré.               |
| R. E. Harris..            | Wolfville.               |
| R. E. Harris & Son..      | "                        |
| J. H. Hunter..            | Mount Denison.           |
| R. A. Jodrey..            | Gaspereaux.              |
| Kingston Fruit Co., Ltd.. | Kingston.                |
| H. C. Marshall..          | Williamston.             |
| A. L. Outhit..            | Kingston.                |
| W. W. Pineo..             | Waterville.              |
| Geo. Power..              | Kingston.                |
| J. Sexton..               | Falmouth.                |
| H. A. Spence..            | St. Croix                |
| M. L. Warner..            | Kingston.                |

## ALBERTA—

|                           |             |
|---------------------------|-------------|
| McPherson Fruit Company.. | Lethbridge. |
|---------------------------|-------------|

## BRITISH COLUMBIA—

|                    |            |
|--------------------|------------|
| Guen Wo & Co..     | Vancouver. |
| Haung Shing & Co.. | "          |
| Hong Kee..         | "          |

## MEETINGS.

An interesting feature of the work of the staff is the fruit meetings which they have attended. The inspectors have excellent facilities, especially in certain lines for acquiring information with reference to fruit shipments and fruit packages, and they are in demand wherever fruit growers meet together.



Members of the staff have assisted at meetings as follows:—

|                              |    |
|------------------------------|----|
| Ontario.. . . .              | 90 |
| Quebec.. . . .               | 4  |
| New Brunswick.. . . .        | 1  |
| Nova Scotia.. . . .          | 14 |
| Prince Edward Island.. . . . | 13 |

*Special Series in Western Peninsula.*

Successful meetings were held last May and June in the Counties of Lambton, Kent and Elgin, at the following places:—

|              |                |
|--------------|----------------|
| Forest,      | Glencoe,       |
| Arkona,      | Mount Bridges, |
| Parkhill,    | Fingal,        |
| Ailsa Craig, | Dutton.        |
| Ilderton,    | Cedar Springs. |

This is one of the most favoured parts of Canada as far as climate and soil are concerned. The fruit growing interests, however, are just beginning to revive. In the early history of the Western Peninsula, Kent and Elgin particularly were noted as apple growing counties, but with the depression of the '90's' and the introduction of the San José scale, apple orcharding and fruit growing generally ceased to flourish. Indeed, the most reliable statistics show a distinct decline in those counties.

The southern shore of Lake Huron, in the County of Lambton, was formerly a peach growing district of some importance. The original orchards, however, have all disappeared as the result of the invasion of fungous diseases which the orchardists did not know how to combat. Lately there has been a revival, not only on the immediate lake shore, but further back in the County about Forest and Arkona and, to a lesser extent, at other points. The fungous diseases and insects that formerly discouraged the fruit grower, are now under complete control. The modern spray mixtures and modern spray pumps have placed the fruit growers in a commanding position, and the Leaf Curl and San Jose scale are not considered a serious menace to the industry. Even the dreaded Yellows and Little Peach are quite amenable to methods which, although they do not render them innocuous, enable the fruit grower to engage in the industry without serious loss from that source.

About the feasibility of planting upon the immediate lake shore, there is not the slightest doubt. The greatest menace to the tender fruits is the spring frosts, and these are controlled perfectly near the water. It is a question, however, how far inland this immunity extends, and it might be well to advise caution in planting tender fruits in large quantities in areas that have not been tested for several years, so that the effects of the spring frosts may be known. That is to say, all new plantations of tender fruit should be small, and the hardier fruits, such as apples and pears, should be recommended for the main planting. There is no doubt whatever about the feasibility of planting apples and pears. No part of Canada has greater advantages in soil and climate, and where land is so cheap it would appear that apple and pear growers would have a great initial advantage in the matter of interest charges. The soil, for the most part, is clay loam, running, however, in the County of Lambton on the north and in Elgin on the south, to rather light sandy loam.

The chief drawback is the comparatively small quantity of fruit grown by any one individual. Local markets and co-operative associations are also wanting. In many of the best districts, farmers complained that they could not get ready sale for the apples they had. Upon inquiry, it was found that the entire product of their orchards was, perhaps, a dozen or a score of barrels, and that there were not any more in the immediate neighbourhood or, if there were, they were in equally small quantities. This made it impossible to market the fruit except co-operatively, with any profit, and the



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co-operative idea does not seem to have permeated the inland fruit growers. In consequence of this, it is needless to say that the orchards, for the most part, are poorly cared for, and few farmers count upon them as a regular source of profit.

## ASSISTANCE AT SHORT COURSES.

The short courses of the agricultural colleges continue to be of special interest. The number in attendance and the time limit have increased from year to year, and the scope of the different subjects introduced is becoming correspondingly comprehensive.

During the year, Inspector Carey spent several days at the Ontario Agricultural College, Guelph, and at the Agricultural College, Truro, N.S., giving demonstrations in box packing to the Short Course students. Mr. Jas. Gibb, an expert packer from Kelowna, B.C., was also engaged to assist with the Short Course work at the Ontario Agricultural College and at Macdonald College.

I attended two sessions of the Short Course at Macdonald College, devoting an afternoon to box packing, and giving an evening address on the agricultural co-operative movement, with special reference to apple selling associations.

## BETTER FARMING SPECIAL.

The Ontario Department of Agriculture equipped a 'Better Farming Special' train during the past winter. The Dairy Commissioner's Branch was asked to provide a fruit demonstrator among experts in other lines. Mr. Carey was selected and accompanied the train from February 26 till March 16, touching at the following points:—

|                    |                           |                |
|--------------------|---------------------------|----------------|
| St. Joachim,       | Windsor,                  | Elmstead,      |
| Tilbury,           | Chatham,                  | Kent Bridge,   |
| North Bothwell,    | North Glencoe,            | Caradoc,       |
| Hyde Park,         | Thamesford,               | Woodstock,     |
| Belmont,           | Tillsonburg,              | Ingersoll,     |
| Drumbo,            | Galt,                     | Milton,        |
| Moffat,            | Elmira,                   | Milverton,     |
| Goderich,          | Blyth,                    | McNaught,      |
| Streetsville,      | Brampton,                 | Cataract Jct., |
| Orangeville,       | Shelburne,                | Dundalk,       |
| Owen Sound,        | Chatsworth,               | Markdale,      |
| Flesherton,        | Bolton,                   | Woodbridge,    |
| North Toronto,     | Agincourt,                | Claremont,     |
| Myrtle,            | Pontypool,                | Peterboro,     |
| Norwood,           | Ivanhoe,                  | Tweed,         |
| Sharbot Lake,      | Perth,                    | Smith's Falls, |
| Carleton Place,    | Merrickville,             | Mountain,      |
| Winchester,        | Finch,                    | Apple Hill.    |
| Macdonald College, | Windsor Station, Montreal |                |

This 'Better Farming Train' proved an attractive feature and drew large crowds at almost every point. In connection with the work, Inspector Carey writes:—

'I would pronounce the "Better Farming Special" a success. Of course, on account of the hurry and rush, it is difficult to deal with the wants of the growers in detail, but in the "Farming Special" there is enough to attract a certain class that perhaps would not pay much attention to the ordinary meeting. I feel satisfied that a great deal of good can be accomplished through this medium. The schools were dismissed in many cases, and I was impressed by the interest taken by the pupils in our



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talks on plant life and insect pests. I would say that special attention should be paid to this phase of instructive work if the "Better Farming Special" is continued another year.'

#### FRUIT SUBJECTS AT DAIRY MEETINGS.

I attended the Dairy Convention in Hemmingford, January 29, and the District of Bedford Dairymen's Association Annual Meeting in Cowansville, February 2. Both these meetings proved exceedingly interesting. Although dairy subjects predominated on the programmes of the meetings, practically every one present had an orchard, large or small, upon his farm. The meetings furnished an excellent opportunity for drawing attention to the advisability of adopting side lines even in so well established a branch of farm industry as dairying. There is no doubt that the revenue of every dairy farm in these splendid districts could be very largely increased by the addition of a well kept orchard. The orchard would utilize some of the coarse manure at a season when it would be difficult to dispose of it anywhere else, and with the utmost advantage to the orchard. The amount of land withdrawn from forage crops would be so small that it might be regarded almost as a negligible quantity. The chances are that the dairyman who undertakes orchard work, will thereby become a better farmer to such an extent that he will grow more forage on less land.

Although a great many skilled dairymen were in attendance at Hemmingford and Cowansville, the majority of all such meetings are really men following mixed farming. It was, therefore, I think quite appropriate that a side line, so generally followed as orcharding, should receive some attention even at a meeting that is essentially special in its character. Full reports of these meetings have been published elsewhere.

#### THE FRUIT CROP REPORT.

The Fruit Crop Report was issued this year on the 15th of each month, beginning with May and ending with September. The demand for the report continues insistent. As the result of this year's work several improvements have been suggested in connection with the compiling of the report for 1912.

The value of the fruit crop report does not consist exclusively in the novelty of the information nor even in its timeliness. What the fruit growers demand more particularly is the absolute trustworthiness of the reports made with, of course, as much dispatch as can possibly be secured. The Fruit Crop Report is compiled from information furnished by some 3,000 correspondents, located in the fruit districts and, for the most part actually engaged in growing fruit. The information furnished embraces not only an estimate of the crop of each kind of fruit, but takes up all principal commercial varieties of each particular kind. This is a feature in fruit crop reporting that is seldom attempted in a systematic way, and therefore renders our report particularly valuable.

The information gathered from correspondents with reference to insects and fungous diseases is also of very great value. Being actively engaged in the business, our correspondents are in position to know the amount of injury done by any particular insect or fungus, and the reports received simultaneously from such wide areas enable the Fruit Division to report with considerable accuracy upon the extent of the ravages of any particular insect or fungous disease.

In addition to our Canadian report, information is gathered with reference to competing crops in foreign countries.

#### FRUIT CROP CONDITIONS, 1911.

The various issues of the Fruit Crop Report give a record of the fruit year from month to month. The season of 1911 was somewhat unique in respect to the fruit



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crop generally. The weather for the first part of the season was particularly favourable. Although the spring was backward, it was not excessively so, and no serious damage was done by frost except to the peach and cherry crop in British Columbia. One remarkable feature in connection with the fruit crop was the short time fruit trees remained in bloom. The apple blossoms, for instance, usually cover a period of from ten to fifteen days, but this season the blossoms were scarcely open before the petals began to fall. It did not, however, result in any serious damage to the "set" of the fruit, which was fairly good, although perhaps the June "drop" was more pronounced than usual. This may be attributed to the weather conditions, which were much drier than usual. July and August weather can hardly be said to have been favourable. The lack of rain and the exceptionally warm weather had a perceptible effect particularly upon the small fruit crop.

Strawberries were not more than half a crop and other small fruits suffered proportionally, blackberries in some districts being almost a total failure. The effect of the drought and hot weather was also felt in the new plantations of strawberries, which did not recover during the season; and many correspondents predict that the acreage in 1912 will be seriously affected, particularly in Ontario.

Apples and pears suffered, but not so seriously as small fruits. It is significant that the condition of the crop was fairly well established during the month of August, and the estimates that were made upon the reports of the correspondents during this month were practically verified by the crop as picked.

The crop of apples in Prince Edward Island and New Brunswick had no noticeable features, but was a fair average and fairly clean.

Nova Scotia had a record crop. The final results show that a million and a half barrels of apples were placed upon the market, largely from District 6 comprising the Counties of Hants, Kings and Annapolis. This was at least three times the crop harvested last year, and under ordinary circumstances there might have been very great marketing difficulties. The fact that the whole crop was packed and shipped with little or no loss, can be attributed to a very marked extent to the effect of the Co-operative Associations.

The apple crop in Quebec was normal or perhaps a little below the average, but was fairly clean though undersized on account of dry weather.

In Ontario the crop was uneven. The early fruit in southern Ontario was a medium crop, and was not marketed in good condition. There is great room for improvement in the marketing of early fruit in southern Ontario. In the September Report the following note appeared:

'Winter fruit is showing maturity at least two weeks earlier than usual, and fears are expressed for the keeping qualities if the latter part of September and October continues relatively warm.'

September and October were warmer than usual and the winter varieties proved very poor keepers. Inexperienced dealers suffered heavy losses on fruit stored for winter markets. Indeed, this is a noticeable feature of the year everywhere, though of course the fruit from the northern district and from Nova Scotia stood up much better than that from southern Ontario.

The winter apples in western Ontario proved almost a failure, though it is noticeable that where the orchards were well cultivated, pruned and sprayed in former years, they responded in 1911 with a fairly good crop in almost every instance.

On the north shore of Lake Ontario and in the Georgian Bay district, the winter apples were exceptionally good. There was a large crop of Spies and a fairly good crop of Greening, Baldwin and Ben Davis. Other varieties were at least medium.

The 1911 crop of pears was fairly good per tree. It is noticeable, however, that the number of pear trees is decreasing rapidly. The demand in the home market for pears was excellent and, indeed, the home market absorbed the whole crop. It may



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not be amiss here to remark that fruit growers in Ontario particularly are making a great mistake in allowing their pear orchards to decline. Nowhere in America are there better conditions of climate and soil for growing pears than in Ontario. The only drawback to the industry up to date has been Blight. A few years ago this appeared uncontrollable, and orchardists may have been justified in hesitating to plant at that time. Now, however, Blight is amenable to treatment, and the treatment is as efficient as in the case of most other plant diseases. It is not nearly so destructive to pears as the Yellows is to peaches, and the cost of protecting a pear orchard from Blight is not proportionally so great as protecting an apple orchard against Apple Scab. Yet pear growers have apparently become discouraged and, as a consequence, the pear industry is seriously on the decline. The fruit grower who begins at once to plant pears will find an eager market by the time his trees come into bearing.

The plum crop was not exceptionally heavy. Indeed, the market could scarcely be said to have been fully supplied.

The same may be said of peaches, although the crop in Ontario was a fairly good one. The peach industry of British Columbia received a serious check last year, and it is doubtful whether growers should plant heavily until further experience is gained with reference to winter killing and spring frosts in that province.

Grapes maintained their reputation for being constant and prolific croppers. The acreage of late years has increased largely but consumption has not increased proportionally; and though the quantity of grapes that could be grown in Ontario is almost unlimited, it would appear that better marketing facilities must be in sight before much extension of the business could be advised. Those who are in the best position to judge, are of the opinion, however, that if the crop were well distributed, by means of properly organized co-operative associations, the consumption of grapes in our present markets could be increased 50 per cent, perhaps even more.

Tomatoes proved a very short crop on account of the dry weather in the districts where they are grown. Many correspondents expressed great dissatisfaction with the prices paid by the canning factories. With a remunerative price, there is no reason why an unlimited quantity of tomatoes should not be grown in southern Ontario. They cannot be grown cheaper anywhere in America.

### THE APPLE SEASON OF 1911-12.

The season of 1911-12, so far as the apple crop was concerned, was somewhat abnormal. A very light crop in British Columbia, a small crop in Prince Edward Island, New Brunswick and Quebec, and scarcely a medium crop in Ontario, was balanced by an extraordinary crop in Nova Scotia.

#### THE SEASON IN NOVA SCOTIA.

In fact, the feature of the year was the large crop of apples harvested in Nova Scotia. For several years prior to 1910-11, there had been a succession of good crops. The 1910-11 crop was abnormally small, but the crop of 1911-12 was so much above the average that it would not be sufficient explanation to say that it was the result of the 'rest' the trees had in 1910. As a matter of fact, orcharding has been making good progress in Nova Scotia for a number of years. Better methods have been introduced and practiced by a large number of orchardists and yields are correspondingly high. Off-years are becoming less frequent than formerly, and standard crops are more likely to be harvested regularly from year to year. Again, the success of Nova Scotian orchardists has induced many of them to increase their plantings considerably, and there have certainly been a large number of new plantings made by people who have decided to go into the business somewhat extensively.



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The good culture, the increase in existing plantations and the establishment of many new plantations, have gone on so quietly that even the people of Nova Scotia were not prepared for the unusual conditions of this year. The season of 1911-12 was undoubtedly favourable in its weather conditions, but it must be taken into consideration, also, that many thousands of trees bore their first crop of fruit, and that good culture is becoming common.

In the natural course of things, it would be expected that, unless climatic conditions were particularly favourable, there would be a small crop for the season of 1912-13. Having in mind, however, the large number of young trees now coming into bearing each year and the fact that the orchards are so much better cared for than formerly, it is quite possible—and, indeed, quite likely—that with ordinary climatic conditions the apple crop of Nova Scotia for 1912-13 will equal that of any previous year, except 1911-12.

The following are extracts from the report of the Dominion Fruit Inspector G. H. Vroom, who has immediate charge of the work in Nova Scotia:—

‘The season of 1911-12 has been a record one so far as the apple industry of Nova Scotia is concerned. Beginning with April, 1911, the weather conditions were ideal. The cool days of the first of April kept the buds from bursting too early, and as the warmer days came the last of the month and the early part of May, the trees began to show signs of life and, by the end of May, the whole country was a mass of apple blossoms. During the blossom season the weather was fine and warm giving the bees a chance to work among the flowers, which resulted in a ‘heavy’ set of fruit, which developed into a large crop.

‘Spraying was more general and more thorough than ever before, lime and sulphur being generally used in the Annapolis Valley. Insect pests, therefore, made little headway in the apple orchards.

‘The summer of 1911 was dry and this, together with quite thorough spraying, resulted in a very clean crop of fruit. Shipping began earlier than usual on account of the fruit maturing earlier owing to the hot dry weather.

‘A large quantity of Nova Scotian fruit found its way into the Western markets, and I am sorry to say some of it was not a credit to Nova Scotia. Favourable reports, however, were received from the larger portion of it. Germany also took a large quantity of Nova Scotian apples.

‘The apple crop has been handled in a satisfactory manner. The twenty-two Co-operative Companies handled more than a quarter of the entire crop in a very satisfactory way. More Co-operative Associations are being formed, and the ushering in of the season of 1912-13 will probably see thirty or more such Associations in operation, all under the direction of the Central Association.

‘So far as the inspection is concerned the season has been a busy one, and the staff of inspectors at Halifax have worked up to the limit, very frequently all night; in fact, the shipping has been carried on night and day since last October.

‘The grading and packing has been fairly well done, but there is yet room for a great improvement in the handling of the fruit from the trees to the packed barrel. Apples are handled with too much haste or I might say carelessness, which bruises and injures them materially. One other defect is the over-pressing, which bruises half the contents of the barrel.

‘The barrels themselves have not been what they should have been, particularly in the Western part of the fruit district. Rough inferior stock has been used and, in many cases, both ends were rough, thus giving the packages an unsightly appearance. Quite a large percentage of the barrels have been under size in addition to being roughly made. Many fruit growers are not careful to keep their packages clean. When an apple barrel is left out in the rain, rolled through mud and muck after it



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has been filled, it is in bad condition when it arrives in the market, and suffers a consequent cut in price of from one to two shillings simply on account of its appearance.

'The thermograph records show that the ventilation of the ships has been well looked after by those who had the matter in charge.

'Twenty-three prosecutions have been recorded for violation of the Inspection and Sale Act, Part IX, in Nova Scotia during the past season.

'There were 1,404,344 barrels of apples exported from Nova Scotia; the shipments to the Western market amounted to 176,150 barrels, and it is estimated that the local markets absorbed 150,000 barrels, making a total of 1,730,494 barrels of Nova Scotian apples marketed.'

(Further particulars with reference to the apples exported will be found in the Report of the Chief of the Markets Division.)

#### NOVA SCOTIAN APPLES IN GERMANY.

It will be noted that 117,933 barrels of apples and 547 boxes were exported from Nova Scotia to Germany. Although Canadian apples, principally from Ontario, have found their way to German markets in comparatively small numbers in former years, this is practically a new departure for Nova Scotian shippers. In this connection it may not be out of place to quote a paragraph from the report of the Canadian Acting Trade Commissioner in Hamburg. Writing to the Department of Trade and Commerce he says:—

'There have been more apples imported from Canada during the past season than ever before, mostly from Nova Scotia. Your commissioner saw some 3,000 barrels landing at the fruit warehouse in Hamburg, and had a number of barrels opened for his inspection. They were not in first-class condition, nor was this to be wondered at as they were shipped from Halifax to London, thence to Hamburg, there discharged into lighters and warehoused. Large shipments are disposed of at auction in the same manner as at Liverpool and Glasgow, except that the samples are not shown in the auction rooms; the fruit is shown at the warehouse at the docks in the morning, and the auctions take place in the afternoon. The large dealers from Berlin and other cities go to Hamburg and attend the sales, which are held twice or three times a week. Catalogues are prepared and distributed among the buyers. There is an open square in Hamburg which accommodates about 500 vendors, and fruits of all kinds are disposed of to housekeepers and small pedlars.'

#### PRICES OF APPLES.

One outstanding feature of the apple season, brought to our notice promptly by the fruit crop correspondents, was the high price with which the season commenced in Ontario. The crop was undoubtedly under-estimated by these buyers who offered \$2.50 to \$3.00 for No. 1 fruit. Of course, large quantities of apples were bought much cheaper than this, but high prices were the rule. The result was that apples were somewhat slow going into consumption. Prices lowered in November and December, and there was a decided slump through January and part of February. The market recovered, however, and first class stock sold well to the end of March.

As a consequence of the somewhat lower prices than were expected by the buyers and of the poor keeping qualities of the apples, many dealers lost heavily. With the improved transportation and storing facilities, it would seem that there is little excuse for speculating in apples. The transportation and storing facilities make it possible to place apples upon the market when the market demands them, and growers therefore need not fear to hold fruit until it is in season. This would do away with much of the speculative element, and the grower could depend upon the price that the market afforded. This market price, even late in the season, is seldom lower than the price



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which the buyer will give the grower earlier in the season. Of course, some markets, such as the Northwest, must buy ahead as shipments are impossible during the very cold months. No one can hold apples so cheaply and so well as the growers, especially where they are united in co-operative associations; and the apple industry would lose one of its very objectionable features if speculative buying could be eliminated.

## THE NORTHWEST MARKET.

The Northwest market continues to develop with great rapidity. It is extremely difficult to procure accurate statistics as to the exact amount of fruit consumed, nor is this at all necessary to enable us to form an opinion, in a general way, as to the capacity of this market. One outstanding feature of the present season we find in the fact that many large dealers, who depended formerly almost entirely upon the British market, turned their attention this year exclusively to the Northwest, and found a ready sale for their holdings.

This year, too, has demonstrated that Nova Scotia is a distinct factor in the Northwest market. The crop of Nova Scotia Gravensteins was particularly large, and many thousands of barrels found their way as far west as the Pacific coast at fairly remunerative prices. The fact that Nova Scotia is extending her orchard area very rapidly, makes this a feature well worth noting in a review of the fruit year. The Nova Scotia shippers realized a net price of from \$1.50 to \$2.00 per barrel, f.o.b., and it is well known that they would continue to produce even if prices were reduced considerably below these figures. Ontario, therefore, and British Columbia, will find that the advent of Nova Scotia into the Northwest market, introduces a new competitor that may materially change the conditions of that market.

## APPLE ORCHARD COMPANIES.

A notable event of the year in connection with the apple industry has been the establishment of several orchard companies. These companies are quite distinct from real estate companies that clear and plant land to be afterwards sold in smaller blocks. The orchard companies in question have, for the most part, confined themselves to renting farm orchards, usually small, mature—indeed, some of them quite old—and all of them more or less neglected. The companies vary in their contracts, but in the main they undertake to renovate the orchard by pruning and spraying, and make arrangements with the owner for the cultivation and team work generally. A rental of \$15 per acre is usually paid, varying with the locality and the condition of the orchard.

Some of the companies secured a large number of trees and undoubtedly had great difficulty in so organizing their staff as to perform the necessary cultural operations in time. Others, with smaller holdings, succeeded in carrying on operations successfully, and in most cases made a fair dividend at the end of the season. A comparison of the cost of the various operations performed by these companies and the cost when performed by the owner, would show most conclusively that the owner in every case can perform the various operations much cheaper than the company. This, of course, is to be expected. There are, also, many small savings that accrue to the owner that do not come to the renting companies. Nevertheless, the companies are performing a service to the fruit industry inasmuch as they are showing that, even under the greater expense to which they are put, there is still a good profit in growing apples. The effect of these companies is quite noticeable in the larger yields, especially of the higher grades of fruit. No statistics are available to show the exact quantity of fruit handled by these companies, but well informed correspondents estimate that they handled between 100,000 and 150,000 barrels of apples in Ontario alone.



## CO-OPERATIVE ASSOCIATIONS.

For the last ten years, co-operative fruit selling associations have been organized in Ontario. The success of these associations has been beyond question since their first organization. Nevertheless, their growth and influence upon the apple industry had been comparatively slight until the seasons of 1909, 1910 and 1911. There were several reasons for this, chief of which was the lack of co-operative sentiment among fruit growers and farmers generally. The individualistic idea and mode of working had become so ingrained, that any thought of working in groups was received with suspicion. In any particular farming neighbourhood in Ontario, members of the community are of many nationalities and religions. The effect of this is to prevent a feeling of confidence without which there can be no real co-operation. This difference of nationalities and social instincts, so noticeable in farming communities, is an undoubted evil that stands seriously in the way of progress. There is no cure for it, except through the slow process of education. Any movement that will cause the people to work together for any purpose, no matter how trivial, will have its effect in helping to make the individual members of the community better acquainted with each other and will help to show that though there may be differences upon many points, the people generally are inclined to be fairly honest and public-spirited and anxious for the betterment of the community. Once this sentiment has gained a certain foothold, it will be possible to secure co-operative associations.

Another serious obstacle, opposing the formation of co-operative associations, has been the efforts of a certain class of apple dealers, who have been making a living by standing between the fruit grower and the regular fruit merchants in the various markets. The effect of co-operation is undoubtedly to cut out these useless middlemen. These middlemen, however, do not relinquish their hold upon the trade without making a vigorous opposition, and in some cases they have succeeded in delaying the formation of co-operative associations, and in a few cases have disrupted them after they were formed. This particular opposition was strongly felt in Nova Scotia and, consequently the first co-operative associations there were formed and maintained under very great difficulties; and, had it not been for the public-spirited conduct of several pioneer co-operators in Nova Scotia, it is doubtful whether the local apple operators might not have permanently maintained their position. They had a strong hold upon the transportation and storage facilities, and their profits were large, so that the business was well worth fighting for. However, after a certain number of local associations had been formed, a central association was organized that proved altogether more than a match for all the opposing forces, and during 1910 and 1911 about twenty-three local societies were organized in this province.

The number of apple selling associations in Ontario and British Columbia has not increased to the same extent as in Nova Scotia. The situation, however, is hopeful in British Columbia inasmuch as the western fruit growers are inclined to work under co-operative methods, and there is reason for believing that just as fast as orchards develop, co-operative selling associations will be formed.

The following is a list of the co-operative apple selling associations in operation in Canada. This is, perhaps, the most complete list published; nevertheless, it cannot be regarded as including all the associations. It is quite probable that many efficient associations are omitted.

*British Columbia—*

|   |              |
|---|--------------|
| Creston Fruit & Produce Co.....               | Creston.     |
| Grand Forks Fruit Growers' Association .....  | Grand Forks. |
| Hammond Fruit Growers' Association, Ltd. .... | Hammond.     |
| Hatzic Fruit Growers' Association.....        | Hatzic.      |
| Kelowna Farmers' Exchange .....               | Kelowna.     |



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*British Columbia—Continued.*

|   |             |
|---|-------------|
| Kootenay Fruit Growers' Union.....                | Nelson.     |
| Mission District Fruit Growers' Association ..... | Mission.    |
| Okanagan Fruit Union, Ltd. ....                   | Vernon.     |
| Salmon Arm Farmers' Exchange.....                 | Salmon Arm. |
| Victoria Fruit Growers' Association .....         | Victoria    |

*Ontario—*

|   |                   |
|---|-------------------|
| Arkona Fruit Growers' Association. ....                   | Arkona.           |
| Alvinston Fruit Growers' Association .....                | Aughrim.          |
| Arkwright Fruit Growers' Association.....                 | Burgoyne.         |
| Brant Packing Association.....                            | Burford.          |
| Brant Fruit Growers' Association.....                     | Burford.          |
| Burgessville Fruit Growers' Association.....              | Burgessville.     |
| Burlington Fruit Growers' Association.....                | Burlington.       |
| Canadian Apple Exporters Ltd. ....                        | Frankford.        |
| Chatham Fruit Growers' Association .....                  | Chatham.          |
| Clarkson Fruit Growers' Association.....                  | Clarkson          |
| Cobourg Fruit Growers' Association.....                   | Baltimore.        |
| Co-operative Fruit Growers of Ontario, Ltd. ....          | Toronto.          |
| Durham Fruit Growers' Association.....                    | Bowmanville.      |
| Dunnville Fruit Growers' Association.....                 | Dunnville.        |
| Forest Fruit Growers' Association and Forwarding Co....   | Forest.           |
| Georgetown Co-operative Association.....                  | Georgetown.       |
| Georgian Bay Fruit Growers, Ltd.....                      | Thornbury.        |
| Gore Fruit Growers' Association .....                     | New Durham.       |
| Grafton Fruit Growers' Association.....                   | Wicklow.          |
| Grimsby Fruit Growers' Association.....                   | Grimsby.          |
| Hatchley Station Fruit Growers' Association .....         | Hatchley Station. |
| Huron Fruit Growers' Association.....                     | Goderich.         |
| Ilderton Fruit Growers' Association.....                  | Ivan.             |
| Jordan Co-operative Association.....                      | Jordan.           |
| Milton Fruit Growers' Association.....                    | Milton.           |
| Mount Nemo Fruit Growers' Association .....               | Nelson.           |
| Newcastle Fruit Growers' Association.....                 | Newcastle.        |
| Norfolk Fruit Growers' Association .....                  | Simcoe.           |
| Northumberland Co-operative Fruit Growers' Association... | Brighton.         |
| Ontario & Western Co-operative Fruit Growers' Assoc'n...  | Grimsby.          |
| Orono Fruit Growers' Association.....                     | Orono.            |
| Oshawa Fruit Growers' Association .....                   | Oshawa.           |
| Owen Sound Fruit Growers' Association .....               | Owen Sound.       |
| Oxford Fruit Growers' Association.....                    | Oxford Centre     |
| Paisley Fruit Growers' Association.....                   | Paisley.          |
| Pelham Fruit Growers' Association .....                   | Fonthill.         |
| Port Burwell Fruit Growers' Association.....              | Vienna.           |
| Prince Edward Fruit Growers' Association .....            | Wellington.       |
| Simcoe Fruits Ltd.....                                    | Barrie.           |
| Sparta Fruit Growers' Association.....                    | Sparta.           |
| St. Catharines Cold Storage and Forwarding Association... | St. Catharines.   |
| Tillsonburg Fruit Growers' Association.....               | Tillsonburg.      |
| Watford Fruit Growers' Association.....                   | Watford.          |
| Wentworth Fruit Growers' Association .....                | Hamilton.         |
| Winona Fruit Growers' Association.....                    | Winona.           |
| Wyoming Fruit Growers' Association.....                   | Wyoming.          |



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*Quebec—*

|  |                    |
|--|--------------------|
| The Abbotsford Co-operative Fruit Growers' Society .....       | Abbotsford.        |
| The Havelock Fruit Growers' Co-operative Society .....         | Covey Hill.        |
| The Rougemont Fruit Growers' Co-operative Society .....        | Rougemont          |
| La Société Co-operative des Fruitières de St. Hilaire ....     | St. Hilaire.       |
| La Société Co-operative des Fruitières de St. Joseph du Lac .. | St. Joseph du Lac. |
| Union Experimental des Agriculteurs de Quebec.                 |                    |

*Nova Scotia—*

|  |                   |
|--|-------------------|
| Aylesford Fruit and Produce Shipping Company ..... | Aylesford.        |
| Bear River Fruit Co., .....                        | Bear River.       |
| Berwick Fruit Co., Ltd. ....                       | Berwick.          |
| Bridgetown Fruit Co. ....                          | Bridgetown.       |
| Canard Fruit Co. ....                              | Hillaton.         |
| Central Fruit Co., .....                           | Clarence.         |
| Cornwallis Fruit Co., .....                        | Waterville.       |
| Enterprise Fruit Co., .....                        | Clarence.         |
| Granville Fruit Co., .....                         | Upper Granville.  |
| Kingston Fruit Company, .....                      | Kingston.         |
| Kingsport Fruit Company, .....                     | Kingsport.        |
| Lawrencetown Fruit Company, .....                  | Lawrencetown.     |
| Maple Leaf Fruit Company, Ltd., .....              | Canning.          |
| Mayflower Fruit Packing Company, .....             | Kingsport.        |
| Middleton Fruit Company, Ltd., .....               | Middleton.        |
| Paradise Fruit Company, Ltd., .....                | Paradise.         |
| Port Williams Fruit Company, .....                 | Port Williams.    |
| Round Hill Fruit Company, .....                    | Round Hill.       |
| Sheffield Mills Fruit Company, .....               | Sheffield Mills.  |
| South Farmington Fruit Company, .....              | South Farmington. |
| Union Fruit and Produce Company, .....             | Williamston.      |
| United Fruit Companies, .....                      | Berwick.          |
| Waterville Fruit Company, .....                    | Waterville.       |

*Prince Edward Island—*

|                                       |                |
|---------------------------------------|----------------|
| The Co-Operative Fruit Company, ..... | Charlottetown. |
|---------------------------------------|----------------|

## SOME FACTS IN CONNECTION WITH ONTARIO CO-OPERATIVE ASSOCIATIONS.

It is scarcely possible to get accurate statistics and other information with reference to the working of co-operative associations at the present stage of growth. Thirty-four associations in Ontario supply interesting details upon a number of points. Twenty-one of these are incorporated under Ontario Statutes, and thirteen of them are not incorporated. In the matter of capital these figures are just reversed. Twenty-one have practically no capital, and thirteen have more or less, the largest capital being \$30,000. About one-third of the associations do not distribute orchard supplies at cost; about half have no equipment of any sort; twelve have good packing houses, well equipped; and two have modern mechanical cold storage plants.

Many of the associations are not yet on a permanent basis. The need for any large amount of capital is not especially urgent. Nevertheless, even in the smallest association there should be equipment that would call for some investment. A central warehouse is almost a necessity in any association that is at all likely to be permanent. The idea is rapidly gaining ground that no grower should grade his own apples for sale. The man who owns the apples sees a blemish with altogether different





FIG. 1.

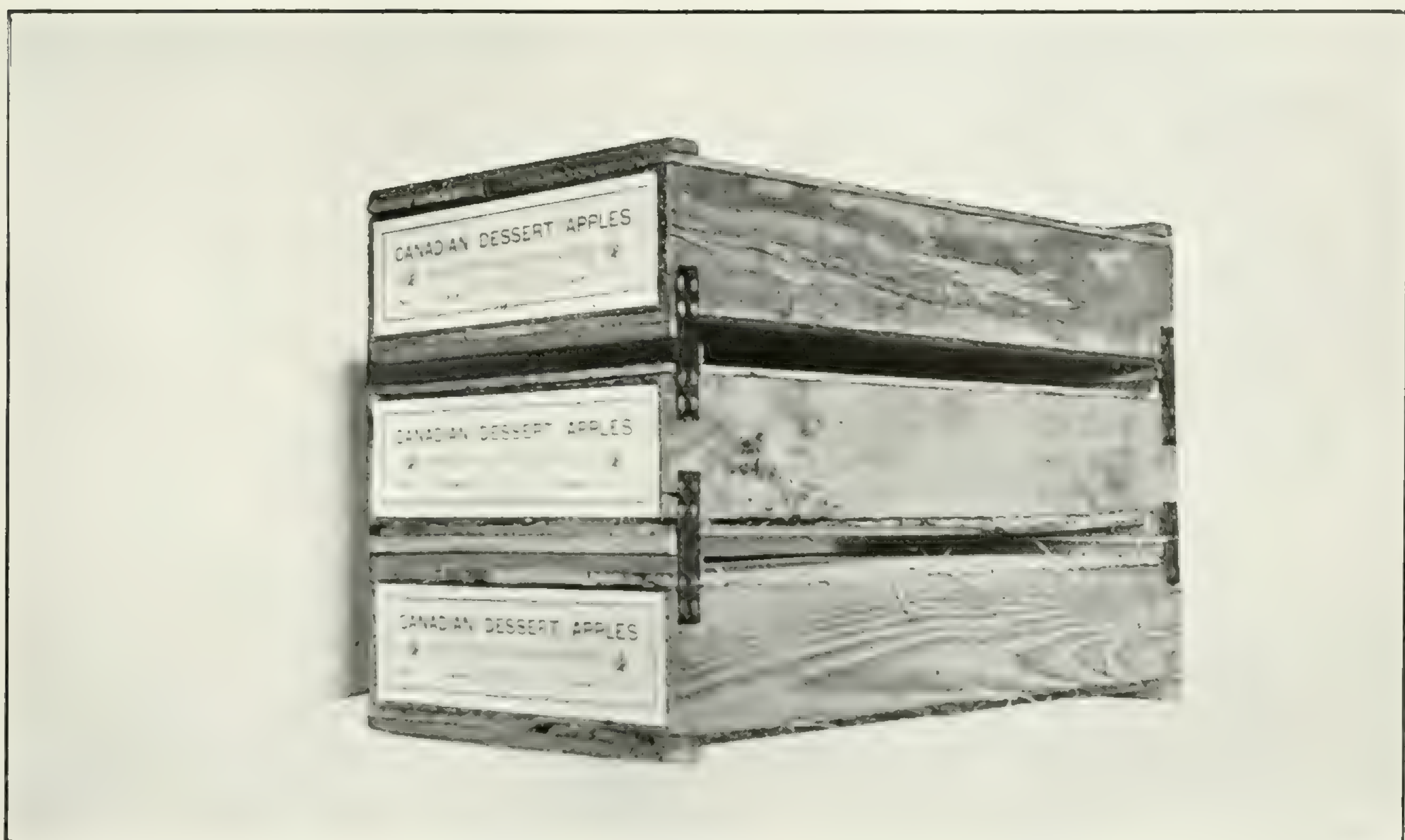


FIG. 2.

1. Showing style of Packing Fameuse Apples for Festival of Empire Exhibition, London.
2. Showing Method of "Crating" 3 single layer fruit cases.







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eyes from the man who consumes them and, as human nature cannot be eliminated entirely, the better way is for the fruit growers to form co-operative associations, have a central packing house, and place the grading and packing of their apples in the hands of disinterested professional packers. This work can be done satisfactorily only in a central packing house, and the fact that there are so few in Ontario, shows a grave weakness in the co-operative movement in this province.

## CO-OPERATIVE ASSOCIATIONS AS DISTRIBUTORS.

Another evidence of the somewhat temporary organization of the Ontario associations is the fact that so many of them fail to use the association as a medium for distributing orchard supplies. The St. Catharines Cold Storage and Forwarding Association has made a great success of distributing orchard supplies to its patrons, and has very kindly offered its services in this connection to many of the smaller associations. In this way cheaper supplies have been furnished to about one-third of the Ontario associations, which has contributed not a little to the very marked improvement in spraying. Fruit growers who would never have thought of spraying, have taken it up from the mere fact that they could conveniently and cheaply secure the apparatus and spraying material. It is to be regretted that every association does not make provision for acting as a distributing agent in orchard supplies.

It is interesting to find that twenty-one of the associations are incorporated. An unincorporated association is liable to disband at any time. If there is no incorporation, no investment in equipment and no working capital, any temporarily discouraging feature serves as an excuse to disrupt the association. It cannot be urged too strongly, therefore, upon all the associations that they should at once secure a charter. The procedure in Ontario for this purpose can be learned by applying to the Provincial Secretary, Toronto.

## CO-OPERATIVE LEGISLATION.

Perhaps the fact that so large a number of co-operative associations are unincorporated may be attributed in part at least to the want of proper co-operative legislation in Ontario or, for that matter, in the Dominion, and those who have the movement most at heart feel that there is a pressing need for co-operative legislation.

But even those who are most interested in co-operative legislation are not quite unanimous as to what would constitute the chief feature of such legislation. Three points, however, stand out clear and distinct. All truly co-operative legislation must provide for the management of the association by the whole membership, and not simply by the members who supply capital. This would mean, 'One man, one vote,' no voting by shares and no proxies. The second feature would be the payment of capital by a fixed and definite percentage. There is no reason why the remuneration for capital should not be fixed definitely and, if necessary, before the capital is engaged. We have no difficulty in fixing the wages of men at the time when they are engaged; there should be the same facility for fixing and limiting the remuneration for capital. A third feature should be a provision whereby the surplus profits that accrue, which it is not deemed expedient to use as a reserve fund, should be returned to the members in proportion to the use they have made of the association.

It will be seen that the object of such legislation is to prevent capital and dividends from dominating the policy of the company. In share companies it has been almost the universal experience that the management soon falls into the hands of a few who supply capital. Co-operative associations are not formed for the purpose of using capital. Capital is only incidental. The main object of the incorporation is to improve the industry. Hence the necessity for some provision in co-operative legislation that will effectually prevent capital from having any power to secure a controlling influence in the management of the affairs of the association. It is true, however, that



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occasionally a joint stock company is managed on co-operative principles, but it is the exception. The difference is not merely a theoretical one. It is quite possible, for instance, to conceive of an apple selling association which, if managed for dividends, would be managed to the detriment of the main part of the membership, and the rewards would go largely to a few who happened to have money invested in the concern.

In several Ontario associations, now defunct, this dividend, earning spirit contributed largely to the breaking up of the association. A few men only incidentally interested in the industry, contributed a large part of the capital, which was innocently accepted by the association. As soon as the association became worth while, the membership found that the chief benefits were converted into cash and distributed as dividends on stock. As a result, many large shippers benefited little by the association and, consequently, withdrew and with them went the possibilities of making a dividend.

In nine cases out of ten what an apple shipping association is searching for is not an organization to secure dividends on stock, but an organization that will benefit the industry. This cannot be secured in our ordinary joint stock organization. It is very remarkable, indeed, how the joint stock idea has become ingrained in the minds of Canadian people so that they consider it perfectly legitimate and right that the benefits of any undertaking should be distributed with reference to capital alone. Such sentiment must be entirely eradicated before the apple selling associations can be placed upon a proper basis.

#### THIRD DOMINION CONFERENCE OF FRUIT GROWERS.

The third Dominion conference of fruit growers was held in Ottawa, February 14, 15 and 16. The delegates represented every part of Canada and their recommendations, therefore, may be taken as representing very fairly the wishes and needs of Canadian fruit growers. Some of the resolutions passed by the conference recommended modifications of the Inspection and Sale Act; but further reference to the proceedings is unnecessary here as a full report is being prepared for general distribution.

A. McNEILL,  
*Chief, Fruit Division.*

#### APPENDIX IV.

##### REPORT OF EXPERIMENTS IN CARE AND HANDLING OF CREAM FOR BUTTERMAKING.

BY GEO. H. BARR, *Chief, Dairy Division.*

I hereby submit a report of the experiments carried on at the Renfrew Creamery, Renfrew, Ont., in 1911.

The experiments conducted in 1910 in caring for the cream at two farms near Renfrew (a partial report of which was submitted last year) showing clearly, that cream which was cooled immediately after skimming and kept sweet until delivered at the creamery, and then allowed to ripen without pasteurization or the use of a 'starter' produced in nearly every case a poor *keeping quality of butter*. The flavour



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was, in most cases, very fine when the butter was fresh, but in three weeks or a month, it had become stale or had an old cream flavour. It seemed quite clear that to get the best results from gathered cream, it must be cooled and kept sweet at the farms and delivered to the creamery in that condition, but in order to secure a good keeping quality in the butter, it would be necessary to adopt some method of handling the cream at the creamery in place of allowing it to ripen naturally.

Further experiments were therefore conducted in 1911 on *different methods of treating the cream after it was received at the creamery.*

All the cream received at the Renfrew Creamery is delivered in individual cans, a good deal of it coming in by train. This enabled us to select almost any kind of cream that we wished to experiment with.

The experiments consisted of 42 churnings in a small-sized combined Simplex churn.

A short explanation of the methods of treating the cream, and of the terms used, will make the following tables more easily understood. As the cream was being delivered by the patrons, the necessary selections were made and put into one of the creamery vats. After being thoroughly mixed it was drawn off into ten gallon cream cans, each experimental lot containing 160 pounds of cream. Pasteurizing, cooling and ripening was done in these cans in a wooden tank in the creamery.

The term 'raw cream' refers to the cream that was not pasteurized.

'Natural ripening' means that the cream was allowed to ripen or develop acidity without the addition of starter.

'Pasteurizing.' In every case, the pasteurizing temperature was 150 degrees. This temperature was maintained for 20 minutes and then the cream was cooled to the ripening temperature as quickly as possible with ice and water.

In nearly every experiment, the cream was cooled to the churning temperature between 6 and 8 o'clock in the evening.

The 'starter' used in all the experiments was made of skimmilk powder prepared by adding one pound of the powder to one gallon of pure water. Ten per cent of this starter was used in every case.

In ripening and churning, we tried to adjust the temperatures and other conditions to suit the different lots of cream, so that the very best results would be obtained in every case.

The butter was scored by the writer and Mr. J. G. Bouchard when it was about two weeks old, at which time it was removed from the creamery cold storage and shipped to the Ottawa Cold Stores where it was held at a temperature of 10 degrees. The temperature in the creamery cold storage was 38 to 40 degrees. The butter was scored again by the same judges on July 14 and September 21. On October 20, the butter was shipped to London, Ont, and there scored by Messrs I. W. Steinhoff and J. B. Muir, both well known as buyers of butter and cheese and expert judges, and also by F. Dean and D. McMillan, Creamery Instructors in western Ontario. The score given in the tables under November 1 is the average score of these four experts.

Experiments B, C and D are practically the same, sweet clean flavoured cream being selected, one half of which was kept twenty-four hours longer than the other before churning.

## EXPERIMENT B.

On May 31, 1,280 pounds of cream were selected and after being thoroughly mixed in a cream vat, churnings 1, 2, 3 and 4 were drawn off and treated as shown in Table I.

The remainder of the cream was left in the cream vat at 52 degrees until the following day, June 1, when it was divided for churnings 5, 6, 7 and 8, as in Table II.



Table I.

| No. of Churning. | Kind of Cream.   | Method of Ripening. | Acidity at Churning. | SCORE ON FLAVOUR OF BUTTER. |          |         |                    |
|------------------|------------------|---------------------|----------------------|-----------------------------|----------|---------|--------------------|
|                  |                  |                     |                      | Two Weeks Old.              | July 14. | Nov. 1. | Average of Scores. |
|                  |                  |                     | %                    |                             |          |         |                    |
| 1                | Raw.....         | Natural.....        | .59                  | 42.50                       | 41.00    | 39.33   | 40.94              |
| 2                | ".....           | Starter.....        | .62                  | 42.50                       | 42.00    | 39.50   | 41.33              |
| 3                | Pasteurized..... | Natural.....        | .39                  | 43.50                       | 41.75    | 39.83   | 41.69              |
| 4                | ".....           | Starter.....        | .55                  | 43.00                       | 43.00    | 40.66   | 42.22              |

The cream contained 27.5 per cent of butter fat. The temperature of the cream when received was 66 degrees. The acidity of the cream when received was .37 per cent, and it had a clean flavour. It was churned on June 1.

Table II.—Remainder of the Cream received May 31. Acidity at noon June 1, .53 per cent. Churned June 2.

| No. of Churning. | Kind of Cream.   | Method of Ripening. | Acidity at Churning. | SCORE ON FLAVOUR OF BUTTER. |          |         |                    |
|------------------|------------------|---------------------|----------------------|-----------------------------|----------|---------|--------------------|
|                  |                  |                     |                      | Two Weeks Old.              | July 14. | Nov. 1. | Average of Scores. |
|                  |                  |                     | %                    |                             |          |         |                    |
| 5                | Raw.....         | Natural.....        | .56                  | 42.50                       | 42.00    | 40.16   | 41.55              |
| 6                | ".....           | Starter.....        | .60                  | 42.50                       | 42.50    | 39.66   | 41.55              |
| 7                | Pasteurized..... | Natural.....        | .52                  | 43.50                       | 43.00    | 39.83   | 42.11              |
| 8                | ".....           | Starter.....        | .60                  | 43.50                       | 42.50    | 40.16   | 42.05              |

EXPERIMENT C.

On June 7, 1,280 pounds of cream were selected and churnings 1, 2, 3 and 4 as in Table III were drawn off. The remainder was left in the cream vat at 51 degrees until the following day, June 8, and then divided into churnings 5, 6, 7 and 8 as in Table IV.

Table III.

| No. of Churning. | Kind of Cream.   | Method of Ripening. | Acidity at Churning. | SCORE ON FLAVOUR OF BUTTER. |          |         |                    |
|------------------|------------------|---------------------|----------------------|-----------------------------|----------|---------|--------------------|
|                  |                  |                     |                      | Two Weeks Old.              | July 14. | Nov. 1. | Average of Scores. |
|                  |                  |                     | %                    |                             |          |         |                    |
| 1                | Raw.....         | Natural.....        | .51                  | 42.50                       | 41.00    | 38.66   | 40.72              |
| 2                | ".....           | Starter.....        | .55                  | 43.00                       | 43.00    | 40.16   | 42.05              |
| 3                | Pasteurized..... | Natural.....        | .32                  | 43.00                       | 43.00    | 40.16   | 42.05              |
| 4                | ".....           | Starter.....        | .44                  | 43.00                       | 43.00    | 40.00   | 42.00              |

The cream contained 27.5 per cent of butter fat. The temperature of the cream when received was 62 degrees. The acidity of the cream when received was .29 per cent, with a slight grassy flavour. It was churned on June 8.



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Table IV.—Remainder of the Cream received June 7. Acidity at noon June 8, .52 per cent. Churned June 9.

| No. of Churning. | Kind of Cream. | Method of Ripening. | Acidity of Churning. | SCORE ON FLAVOUR OF BUTTER. |          |         |                    |
|------------------|----------------|---------------------|----------------------|-----------------------------|----------|---------|--------------------|
|                  |                |                     |                      | Two Weeks Old.              | July 14. | Nov. 1. | Average of Scores. |
|                  |                |                     | %                    |                             |          |         |                    |
| 5                | Raw.....       | Natural .....       | .60                  | 41.50                       | 41.50    | 39.00   | 40.66              |
| 6                | " .....        | Starter.....        | .62                  | 42.25                       | 42.50    | 39.00   | 41.25              |
| 7                | Pasteurized .. | Natural .....       | .52                  | 42.75                       | 42.75    | 40.50   | 42.00              |
| 8                | " .....        | Starter.....        | .57                  | 43.00                       | 42.75    | 39.83   | 41.86              |

EXPERIMENT D.

On June 14, 1,280 pounds of the sweetest and best flavoured cream delivered by the patrons were selected. After being thoroughly mixed in the cream vat, churnings 1, 2, 3 and 4 as in table V were drawn off. The remainder was left in the cream vat at a temperature of 64 until the following day, June 15, when it was divided into churnings 5, 6, 7 and 8, as in Table VI.

Table V.

| No. of Churning. | Kind of Cream. | Method of Ripening. | Acidity at Churning. | SCORE ON FLAVOUR OF BUTTER. |           |         |                    |
|------------------|----------------|---------------------|----------------------|-----------------------------|-----------|---------|--------------------|
|                  |                |                     |                      | Two Weeks Old.              | Sept. 21. | Nov. 1. | Average of Scores. |
|                  |                |                     | %                    |                             |           |         |                    |
| 1                | Raw.....       | Natural .....       | .50                  | 42.00                       | 41.00     | 33.16   | 40.72              |
| 2                | " .....        | Starter.....        | .61                  | 42.50                       | 42.00     | 39.66   | 41.38              |
| 3                | Pasteurized .. | Natural .....       | .27                  | 43.00                       | 42.50     | 40.16   | 41.88              |
| 4                | " .....        | Starter.....        | .57                  | 43.00                       | 42.00     | 39.66   | 41.55              |

The cream contained 26 per cent of butter fat. The temperature of the cream when received was 62 degrees. The acidity of the cream when received was .25 per cent, with a sweet and clean flavour. It was churned June 15.

Table VI.—Remainder of Cream delivered June 14. Acidity at noon June 15, .60 per cent. Churned June 16.

| No. of Churning. | Kind of Cream. | Method of Ripening. | Acidity. at Churning. | SCORE ON FLAVOUR OF BUTTER. |           |         |                    |
|------------------|----------------|---------------------|-----------------------|-----------------------------|-----------|---------|--------------------|
|                  |                |                     |                       | Two Weeks Old.              | Sept. 21. | Nov. 1. | Average of Scores. |
|                  |                |                     | %                     |                             |           |         |                    |
| 5.....           | Raw .....      | Natural .....       | .64                   | 41.50                       | 40.00     | 37.66   | 39.72              |
| 6.....           | " .....        | Starter.....        | .67                   | 42.25                       | 40.00     | 38.86   | 40.37              |
| 7.....           | Pasteurized .. | Natural .....       | .59                   | 42.50                       | 42.00     | 39.00   | 41.13              |
| 8.....           | " .....        | Starter.....        | .61                   | 42.75                       | 41.50     | 40.16   | 41.47              |



In these three experiments the butter from *raw cream without starter* was scored; (a) lower than any other 13 times, (b) equal with that from raw cream and starter 4 times and (c) equal with that from pasteurized cream and starter, once.

The butter from *raw cream starter* was scored: (a) higher than that from the raw cream 14 times, equal 4 times, (b) higher than that from pasteurized cream without starter, once and (c) higher than that from pasteurized cream and starter, once.

The butter from *pasteurized cream without starter* was scored: (a) higher than that from raw cream 17 times and equal once, (b) higher than that from raw cream with starter 14 times and equal 3 times, (c) higher than that from pasteurized cream with starter 7 times and equal 5 times, and (d) lower than that from pasteurized cream with starter, 6 times.

The butter from *pasteurized cream with starter* was scored; (a) higher than that from raw cream 17 times and equal once, (b) higher than that from raw cream with starter 12 times and equal 5 times, (c) lower than that from raw cream once, (d) higher than that from pasteurized cream without starter 6 times and equal 5 times and (e) lower than that from pasteurized cream without starter 5 times.

TABLE VII.—Showing the Average Acidity and Scores of the Butter in Experiments B, C and D.

| Churnings.          | Average Acidity in Cream when Received. | AVERAGE SCORES FOR FLAVOUR. |                         |                                    |                                 |
|---------------------|---|-----------------------------|-------------------------|------------------------------------|---------------------------------|
|                     |   | Raw Cream without Starter.  | Raw Cream with Starter. | Pasteurized Cream without Starter. | Pasteurized Cream with Starter. |
| 1, 2, 3, 4. . . . . | 30                                      | 40.79                       | 41.58                   | 41.87                              | 41.92                           |
| 5, 6, 7, 8. . . . . | 55                                      | 40.64                       | 41.05                   | 41.75                              | 41.79                           |

These experiments B, C and D, show that when the cream is fairly sweet, and clean in flavour, there is not a very great difference in the flavour of the butter from raw cream ripened with a starter, as compared with the churnings that were pasteurized. These three churnings, however, score considerably higher than the churnings from raw cream without a starter. There is little difference between the churnings with a low acidity in the cream and those with a high acidity, or the same cream kept 24 hours longer.

The total average score for flavour was 41.54 points for the sweet cream churnings, and 41.30 for the sour cream churnings.

In experiments A, E and H, the worst cream we could find was selected from the general delivery at the creamery. The quality of the cream at the Renfrew Creamery is better than at many cream gathering creameries and, for that reason, we were perhaps not able to get as poor a quality of cream to experiment with as some butter-makers are obliged to handle. Some of it was, however, as bad as anyone would care to take in.



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## EXPERIMENT A.

On May 17, 640 pounds of cream were put in one of the creamery vats and after being thoroughly mixed, churnings 1, 2, 3 and 4 were drawn off and treated as shown in the following table.

TABLE VIII.

| No. of Churning. | Kind of Cream.    | Method of Ripening. | Acidity at Churning. | SCORE ON FLAVOUR OF BUTTER. |          |         |                    |
|------------------|-------------------|---------------------|----------------------|-----------------------------|----------|---------|--------------------|
|                  |                   |                     |                      | Two Weeks Old.              | July 14. | Nov. 1. | Average of Scores. |
|                  |                   |                     | %                    |                             |          |         |                    |
| 1                | Raw .....         | Natural .....       | .57                  | 42.50                       | 42.00    | 36.33   | 40.17              |
| 2                | " .....           | Starter .....       | .63                  | 42.50                       | 42.50    | 38.00   | 41.00              |
| 3                | Pasteurized ..... | Natural .....       | .48                  | 42.75                       | 42.75    | 38.66   | 41.38              |
| 4                | " .....           | Starter .....       | .58                  | 43.00                       | 43.00    | 38.66   | 41.55              |

The cream contained 28 per cent of butter fat. The temperature of the cream when received was 57 degrees. The acidity of the cream when received was .5 per cent and the flavour was not quite clean, one can having a cellar flavour. The cream was churned on May 18.

These figures in Table VIII show that butter made from the raw cream without a starter had gone very badly off in flavour by November 1.

## EXPERIMENT E.

On June 19, 640 pounds of the worst flavoured cream delivered by the patrons were selected and divided into churnings 1, 2, 3 and 4 as in the following table.

TABLE IX.

| No. of Churning. | Kind of Cream.    | Method of Ripening. | Acidity at Churning. | SCORE ON FLAVOUR OF BUTTER. |           |         |                    |
|------------------|-------------------|---------------------|----------------------|-----------------------------|-----------|---------|--------------------|
|                  |                   |                     |                      | July 12.                    | Sept. 21. | Nov. 1. | Average of Scores. |
|                  |                   |                     | %                    |                             |           |         |                    |
| 1                | Raw .....         | Natural .....       | .62                  | 39.00                       | 38.00     | 36.50   | 37.83              |
| 2                | " .....           | Starter .....       | .64                  | 41.50                       | 39.00     | 37.66   | 39.38              |
| 3                | Pasteurized ..... | Natural .....       | .54                  | 41.50                       | 41.00     | 39.50   | 40.66              |
| 4                | " .....           | Starter .....       | .58                  | 42.50                       | 41.00     | 40.00   | 41.16              |

The cream contained 30 per cent of butter fat. The temperature of the cream when received was 70 degrees. The acidity of the cream when received was .56 per cent and the flavour was sour and not clean. It was churned on June 20.

The results in Experiment E show a decided advantage in pasteurizing, and especially in pasteurizing and using a starter.



EXPERIMENT H.

On July 12, 640 pounds of the worst cream delivered by the patrons were again selected and divided into churnings 1, 2, 3 and 4 in the following table.

TABLE X.

| No. of Churning. | Kind of Cream.        | Method of Ripening. | Acidity at Churning. | SCORE ON FLAVOUR OF BUTTER. |           |         |                    |
|------------------|-----------------------|---------------------|----------------------|-----------------------------|-----------|---------|--------------------|
|                  |                       |                     |                      | July 24.                    | Sept. 21. | Nov. 1. | Average of Scores. |
|                  |                       |                     | %                    |                             |           |         |                    |
| 1                | Raw . . . . .         | Natural . . . . .   | .65                  | 40.00                       | 39.00     | 55.50   | 38.16              |
| 2                | Raw . . . . .         | Starter . . . . .   | .66                  | 41.00                       | 39.50     | 36.66   | 39.05              |
| 3                | Pasteurized . . . . . | Natural . . . . .   | .57                  | 42.00                       | 40.00     | 38.50   | 40.16              |
| 4                | Pasteurized . . . . . | Starter . . . . .   | .66                  | 42.00                       | 41.00     | 38.83   | 40.61              |

The cream contained 26.5 per cent butter fat. The temperature of the cream when received was 74 degrees. The acidity of the cream when received was .57 per cent, and the flavour was badly tainted and sour. It was churned on July 13.

Table XI.—Showing the Average Acidity and the Average Scores of the Butter in Experiments A, E and H.

| Average per Cent Acidity in Cream when Received. | AVERAGE SCORES FOR FLAVOUR. |                         |                                    |                                 |
|--|-----------------------------|-------------------------|------------------------------------|---------------------------------|
|  | Raw Cream without Starter.  | Raw Cream with Starter. | Pasteurized Cream without Starter. | Pasteurized Cream with Starter. |
| .54  | 38.75                       | 39.81                   | 40.73                              | 41.10                           |

EXPERIMENT F.

*Keeping Cream in a Refrigerator compared with Keeping it in Water and Ice.*

A first-class house refrigerator was placed in the creamery and the cream from one farm was brought in as soon as it was separated night and morning for three days and divided equally into two lots. One half was set in the refrigerator and the other placed in water and ice in a wooden tank in the creamery.

The following table shows the average temperature and acidity of the cream for two different periods.

TABLE XII.

| Cream Kept in.          | Average Temperature. | Average Acidity. | Ice Used. |
|-------------------------|----------------------|------------------|-----------|
|                         | Degrees.             | %                | Lbs.      |
| Refrigerator . . . . .  | 53.9                 | .415             | 221       |
| Ice and Water . . . . . | 54.8                 | .230             | 178       |



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There were 43 pounds more ice used in the refrigerator than in the tank with cold water. The average temperature of the cream in the refrigerator was the lowest by nearly 1 degree, yet the acidity was almost twice as high as in the cream held in the tank with ice water.

The difference is, no doubt, due to the fact that the water being a better cooling medium than air, reduced the temperature of the cream much more quickly.

The covers were kept on the cream cans in both cases and there was practically no difference in the flavour of the cream at any time. No starter was used in this experiment.

The flavour of the butter made from one of the lots was as follows:—

TABLE XIII.

| Cream kept in       | Acidity<br>at<br>Churning | SCORE ON FLAVOUR OF BUTTER. |           |         |                          |
|---------------------|---------------------------|-----------------------------|-----------|---------|--------------------------|
|                     |                           | July 12.                    | Sept. 21. | Nov. 1. | Average<br>of<br>Scores. |
|                     | %                         |                             |           |         |                          |
| Refrigerator .....  | ·55                       | 42·50                       | 41·00     | 36·16   | 39·33                    |
| Ice and water ..... | ·44                       | 42·50                       | 42·50     | 37·33   | 40·77                    |

## CONCLUSIONS.

An ordinary cellar is not a good place in which to keep cream.

Cream must be cooled to 55 degrees and held at that temperature to be delivered to the creamery every other day in a sweet condition. Setting the cream cans in water, or in water and ice, is the best method of cooling.

Cream delivered only twice a week must be cooled immediately after skimming to 48 or 49 degrees and held at that temperature.

A refrigerator is not as good a place in which to cool cream as a tank with water and ice.

The natural ripening of gathered cream at the creamery will not produce butter with good keeping qualities.

The use of ten per cent of clean flavoured starter improves the flavour and keeping quality of the butter.

Butter made from pasteurized cream without a starter has better flavour and better keeping quality than butter made from raw cream to which a good starter has been added, especially when the cream is tainted.

Pasteurized cream with 10 per cent of a starter added gave the best flavoured and best keeping butter.

Cleanliness and low temperature are the two most important essentials in the production of fine flavoured butter with good keeping quality.

GEO H. BARR,  
Chief, Dairy Division.



## APPENDIX V.

## COW TESTING ASSOCIATIONS AND DAIRY RECORD CENTRES.

*By C. F. Whitley.*

## GENERAL.

In 1911 the work of the cow testing associations was continued on the same general plan followed in previous years and as outlined in bulletin No. 12 of this branch. Records were received from 1,255 members with a total of 12,442 cows. Milk record forms were in brisk demand all over the Dominion, with a steady increase in the number of applicants for forms for taking daily weights.

The nature of the work is changing somewhat; many of the associations show a decreased membership not because there are fewer cows being recorded, but for the simple reason that dairymen are not asking the department for so much help, but are keeping their own records personally and are buying milk testing machines. In one factory eleven patrons purchased hand testers. Dairymen feel their need of records.

This serves to point clearly in the direction, so frequently advocated by officials of this branch, of some simple form of general farm bookkeeping being adopted not only for the individual dairy cow, but for each separate department of farm operations. Maximum profit is then readily traced. There has been a decided improvement in both the neatness and completeness of the records received, in many cases they are evidently a work of pride on the part of some of the gentler sex; and it is clear that some dairymen own or have ready access to typewriters.

A summary of the particular extension of the movement where each district is termed a 'Dairy Record Centre' is included further on.

The dairy tests, or milking competitions as conducted by members of the staff in former years were again held at the fall fairs at Woodstock, Ont., Perth, Ont., Sherbrooke, Que., and Amherst, N.S., and attracted more attention than ever.

Members of the staff were also at Toronto exhibition, the Ottawa winter fair, and on the 'Better Farming Special' train in Ontario to draw the attention of the various throngs of interested dairymen and factory men to cow testing.

## TEST EACH INDIVIDUAL COW.

It is important to bear in mind that the immediate object of cow testing is to ascertain the performance of the individual cow. Such figures as are given in this report are the records of many thousand individual cows which obviously have to be greatly condensed. The benefit of the work to the average dairyman lies not in the information obtained regarding all his cows taken as one herd, added up, summarized and averaged, but in the careful investigation of the merits of each cow composing that herd taken separately and individually.

There are many good herd averages included in the various associations indicative of high class dairying, such as 17 cows with an average of 6,758 pounds of milk, 3.7 test, and 248 pounds of fat: 23 cows with an average of 8,393 pounds of milk, 3.2 test, and 274 pounds of fat: 10 cows averaging 8,671 pounds of milk, 3.4 test, and 299 pounds of fat, and others higher.

But the important point of the individual's ability, not the herd average, is the one to notice. Contrasts may be found in hundreds of herds. Two individual records will serve here to show the advantage of knowledge, not guess work. One cow offered



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for sale at a low price because of her poor appearance found no purchaser, nobody liked her looks. But the season's work showed a production of 8,215 pounds of milk and 338 pounds of fat. Surely it pays to test, not simply judge, and condemn, the appearance.

Name is not everything. A three-year-old high grade Jersey, from which much might be expected, rewarded her owner with a bare 49 pounds of fat during the whole season.

## RECORDS SHOULD BE KEPT FOR THE FULL PERIOD OF LACTATION.

It should always be kept in view that because a cow is on the premises for twelve months, involving a certain expenditure during that whole time, therefore the income derived from her must also be viewed from the point of total production during that whole period of twelve months. Several excellent records of one month are included in this report, such as 1,815 pounds of milk and 70 pounds of fat in 30 days, but often the total production of such a cow for the whole twelve months is not known. Unfortunately, it happens in too many instances that a record is kept for one month, or two, then the cow is valued according to that brief season of production. The old proverb 'slow and steady wins the race' applies with telling force to the dairy cow. The persistent milker with only a comparatively small yield may give a far better account of herself at the end of the whole season, than the cow with the brief meteoric career. Each cow should be recorded for the full period of lactation.

What is worth doing at all is worth doing well, and as cow testing has abundantly proved its value to the dairyman, it must surely be evident to every one commencing to weigh and sample that to make records useful as guides in selection they must be kept not for two or three months but from beginning to end of the milking season. A cow is not a common day labourer liable to be discharged when the whistle blows, she is a contributor to the yearly income: hence the incomplete record is only an aggravation and indeed may be misleading. Give each cow full credit for all she produces.

The full force of this is readily seen when one has kept records for a year or two. For instance, in one herd the comparison between two cows is briefly this: in five years one has given 835 pounds of fat, but the other has given 1,380 pounds. There is definite information for intelligent action for the owner in retaining a cow for building up a herd, or for the purchaser who is willing to pay for a cow on her merit.

## TEST AS WELL AS WEIGH.

It is well to remember that because the fat in milk is regarded as a fair basis in computing the value of that milk, therefore the weight of milk alone as given by any cow is not necessarily a true indication of the value of her product. That milk may be very poor in its fat content, or it may be of fair quality, while it is difficult to judge of the respective richness unless it is tested. And as pointed out in this report there are several known cases of milk testing far below 3 per cent of fat, for which milk, if sold separately on its valuation of fat content, there would be little demand. Even without there being a particularly wide variation in the test, one cow may give a thousand pounds of milk, another only seven hundred and seventy pounds during a month, but each cow would yield 30 pounds of fat.

## PROFIT PER COW.

In a herd at Avonbank, Ont., the varying profit per cow is plainly brought out. The total yield of 4 cows aged 4, 3, 8 and 3 amounts to 16,661 pounds of milk and 624 pounds of fat. The total yield of 2 cows aged 4 and 5 amounts to 17,610 pounds of milk and 641 pounds of fat. Thus it is seen that the two cows are at least twice as



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valuable producers as the four. But that is not all. If the cost of feed be put at \$35 per cow and the milk is valued at \$1 per 100 pounds, it is found that the four cows return a total net profit above the cost of feed of \$26.61, whereas the two cows return \$106.10. Thus *one cow is as profitable as four*.

Five cows, ages 8, 7, 5, 2 and 3 in one herd at Bertie, Ont., have an average production of 124 pounds of fat; four cows, ages 13, 5, 8, and 4, in a herd close by, average 398 pounds of fat. With fat at 25 cents per pound and feed at \$30 per cow, *one cow makes as much profit as sixty-nine*.

In a herd at Star, Ont., one 2 year-old produces only 2,020 pounds of milk and 67.6 pounds of fat; another 2 year-old produces 8,125 pounds of milk and 248 pounds of fat. Both being fed alike, how much more profit is there in the one case than in the other?

The influence of poor cows in profit is forced on the attention by the following comparison.

In two adjoining herds at Point Abino, Ont., 2 cows aged 8 and 6, produce a total of 599 pounds of fat; and 5 cows, aged 5, 3, 2, 8 and 2 produce a total of 576 pounds of fat. Valuing feed at only \$28 per cow for the 5 cows there would be a *total profit of only \$4* if the fat is reckoned at 25 cents per pound; allowing \$30 each to feed the 2 cows there is a *total profit of \$89.75*.

This means an average profit in one case of only 80 cents per cow, but in the other case an average profit of \$44.87 per cow. Thus comparing the cows on the basis of net returns, *one cow yields as much profit as fifty-six poor ones*.

Supposing the two owners wished to make one thousand dollars clear profit, one man needs to handle only twenty-two cows, the other would have *the colossal task of keeping one thousand two hundred and fifty*.

In considering the question of profit per cow it may well be borne in mind that some dairy farmers on this continent are making excellent profit with grade cows: such records as 500 pounds of fat, feed cost of \$80 and *net profit of \$100 per cow* may well stimulate other factory patrons.

In two adjoining herds at Scotch Line, one herd of six cows has an average yield of 7,476 pounds of milk and 260 pounds of fat; the other herd of 14 assorted Ayrshire, Holstein and Shorthorn grades averages 3,657 pounds of milk and 130 pounds of fat, *only just half* the other average. In this poorer herd two cows give a total yield of 4,845 pounds of milk each; but four cows, ages 3, 4, 4 and 4, have a total production of only 2,358 pounds of milk each. Valuing their feed at \$25 the two best cows in the herd each made a profit of \$23.45. If the feed be valued at only \$23 per cow each one of the four poorest seems to return to her owner the astounding sum of *fifty-eight cents profit* on her keep for the year.

#### WHAT SOME FARMERS THINK OF COW TESTING.

'I have kept records now for three years and my herd average has increased from 6,100 pounds of milk per annum to 8,200 pounds. One cow with ordinary care and two milkings per day gave over 12,000 pounds of milk.'

'I might just say that we are delighted with the plan and if we could not get record blanks, would have to make some. We have discovered two boarders and saved the life of one which we thought no good.'

'It costs me less now to produce 9,000 pounds of milk per cow than it did to produce 6,500 pounds.'

'With the same number of cows I received \$233 last month, whereas my best month three years ago I got only \$55.'

'I get more milk now from 19 cows than I used to obtain from 32 cows.'

Cow testing is thus seen to be one of the best labour-saving propositions that a Canadian dairyman can entertain.



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A great many instances were detailed in last year's report of substantial increases in the yield of milk and fat and in the cash receipts per cow in various herds in the Dominion.

Table I.—Some Increased Yields from Cow Testing in Ontario.

| Ontario Herds at | No. of Cows in Herd. | Now giving Pounds of Milk. | Used to give Pounds of Milk. | INCREASE PER COW. |           |
|------------------|----------------------|----------------------------|------------------------------|-------------------|-----------|
|                  |                      |                            |                              | Pounds of Milk.   | Per Cent. |
| Peterboro.....   | 20                   | 8,978                      | 6,709                        | 2,269             | 33        |
| Prescott.....    | 28                   | 6,000                      | 3,794                        | 2,206             | 50        |
| Cassel.....      | 14                   | 8,000                      | 5,000                        | 3,000             | 60        |
| Woodstock.....   | 11                   | 10,500                     | 5,500                        | 5,000             | 90        |
| Milton.....      | 23                   | 8,200                      | 4,000                        | 4,200             | 100       |
| Woodstock...     | 20                   | 9,144                      | 4,500                        | 4,644             | 103       |

Cow testing certainly 'pays.'

Table II.—Some Positive Gains from Cow Testing in Quebec.

| Quebec Herds at   | No. of Cows in Herd. | Now giving Pounds of Milk. | Used to give Pounds of Milk. | INCREASE PER CENT. |           |
|-------------------|----------------------|----------------------------|------------------------------|--------------------|-----------|
|                   |                      |                            |                              | Pounds of Milk.    | Per Cent. |
| St. Emélie.....   | 15                   | 6,725                      | 5,534                        | 1,191              | 21        |
| St. Armand.....   | 17                   | 6,482                      | 5,218                        | 1,264              | 24        |
| Kelvingrove.....  | 15                   | 5,760                      | 4,199                        | 1,561              | 37        |
| Aird.....         | 12                   | 7,269                      | 3,792                        | 3,477              | 91        |
| Hemmingford.....  | 10                   | 6,900                      | 4,000                        | 2,900              | 72        |
| East Farnham..... | 8                    | 4,143                      | 2,000                        | 2,143              | 103       |

Cow testing certainly 'pays.'

Table III.—Summary of Average Yields of Herds for the Full Period of Lactation in the Province of Ontario, 1911.

| Full Period of Lactation. | No. of Associations. | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |           |
|---------------------------|----------------------|---------------|--------------|----------------|-------|-----------|
|                           |                      |               |              | Lbs. Milk.     | Test. | Lbs. Fat. |
| Weights and tests ..      | 68                   | 316           | 2,927        | 6,132          | 3.4   | 211.2     |
| Weights only.....         | 12                   | 15            | 188          | 6,448          | ..... | .....     |



Table IV.—Comparisons of Average Yields of Herds Recorded for the Full Period of Lactation in the Province of Ontario, 1911.

| Electoral District.                 | Name of Association.        | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |       |
|-------------------------------------|-----------------------------|---------------|--------------|----------------|-------|-------|
|                                     |                             |               |              | Milk.          | Test. | Fat.  |
|                                     |                             |               |              | Lbs.           |       | Lbs.  |
| Eastern Ontario—<br>Glengarry ..... | McDonald .....              | 1             | 13           | 4,585          | 3·6   | 168·2 |
|                                     | Royal .....                 | 1             | 9            | 4,210          | 3·7   | 156·4 |
|                                     | River Bank .....            | 2             | 33           | 5,045          | 3·9   | 198·2 |
|                                     | Tyotown .....               | 2             | 21           | 5,839          | 3·5   | 206·3 |
| Grenville .....                     | Prescott .....              | 4             | 61           | 7,056          | 3·3   | 234·2 |
|                                     | Spencerville .....          | 3             | 36           | 5,587          | 3·3   | 184·2 |
| Lanark .....                        | Balderson .....             | 7             | 56           | 6,915          | 3·5   | 242·3 |
|                                     | Bathurst .....              | 11            | 101          | 4,816          | 3·6   | 172·8 |
|                                     | Drummond .....              | 3             | 43           | 5,377          | 3·6   | 195·1 |
|                                     | Drummond and Emsley ..      | 5             | 40           | 4,895          | 3·4   | 167·1 |
|                                     | Fallbrook .....             | 2             | 22           | 5,921          | 3·6   | 212·4 |
|                                     | Ferry Road .....            | 3             | 41           | 5,663          | 3·3   | 187·0 |
|                                     | Lanark .....                | 2             | 26           | 7,132          | 3·6   | 257·5 |
|                                     | Harper .....                | 4             | 31           | 5,132          | 3·6   | 183·7 |
|                                     | Weights only .....          | 1             | 9            | 6,797          |       |       |
|                                     | Scotch Line .....           | 6             | 63           | 5,624          | 3·5   | 198·8 |
|                                     | Weights only .....          | 1             | 17           | 3,701          |       |       |
|                                     | Tayside .....               | 9             | 77           | 6,057          | 3·5   | 217·0 |
|                                     | Weights only .....          | 1             | 18           | 6,570          |       |       |
|                                     | Lansdowne .....             | 7             | 90           | 7,259          | 3·4   | 253·2 |
|                                     | Wooler .....                | 4             | 31           | 5,507          | 3·6   | 199·6 |
|                                     | Brocklyn .....              | 1             | 8            | 6,108          | 3·5   | 217·7 |
|                                     | Central Smith .....         | 4             | 77           | 7,184          | 3·4   | 245·8 |
|                                     | Ennismore .....             | 2             | 17           | 6,449          | 3·5   | 226·8 |
| Leeds .....                         | Indian River .....          | 1             | 8            | 5,843          | 3·3   | 195·9 |
|                                     | Keene .....                 | 6             | 46           | 6,082          | 3·3   | 201·4 |
|                                     | Maple Leaf .....            | 2             | 13           | 5,049          | 3·2   | 164·6 |
|                                     | Norwood .....               | 4             | 24           | 8,025          | 3·4   | 277·1 |
|                                     | Weights only .....          | 1             | 7            | 4,408          |       |       |
|                                     | Peterboro .....             | 9             | 65           | 5,501          | 3·4   | 191·3 |
|                                     | Pine Grove .....            | 2             | 8            | 6,452          | 3·7   | 242·3 |
|                                     | Selwyn .....                | 1             | 3            | 5,245          | 3·6   | 192·9 |
|                                     | Shearer .....               | 6             | 59           | 5,954          | 3·4   | 203·2 |
|                                     | Weights only .....          | 1             | 9            | 5,079          |       |       |
|                                     | Trewern .....               | 3             | 33           | 5,548          | 3·5   | 192·8 |
|                                     | Warsaw .....                | 5             | 41           | 5,256          | 3·4   | 181·0 |
|                                     | Westwood .....              | 1             | 7            | 4,557          | 3·5   | 160·4 |
|                                     | Dalmeny .....               | 3             | 34           | 6,021          | 3·6   | 220·4 |
|                                     | Bobcaygeon weights only ..  | 1             | 12           | 6,997          |       |       |
|                                     | Lorneville .....            | 2             | 16           | 5,261          | 3·3   | 174·6 |
|                                     | Reaboro weights only .....  | 1             | 6            | 5,756          |       |       |
|                                     | Stor .....                  | 2             | 21           | 6,324          | 3·0   | 191·5 |
| Western Ontario—<br>Brant .....     | St. George .....            | 5             | 52           | 6,163          | 3·4   | 212·9 |
|                                     | Elgin .....                 | 2             | 26           | 6,748          |       |       |
|                                     | Mapleton weights only ..... | 1             | 18           | 9,175          |       |       |
|                                     | Selkirk .....               | 18            | 93           | 5,322          | 3·4   | 185·1 |
|                                     | Milton West .....           | 3             | 54           | 7,644          | 3·5   | 2,449 |
|                                     | Bluevale .....              | 1             | 5            | 7,389          | 2·8   | 209·9 |
|                                     | Camlachie .....             | 2             | 17           | 5,417          | 3·4   | 182·4 |
|                                     | Forest .....                | 3             | 15           | 5,306          | 3·6   | 191·5 |
|                                     | Thedford .....              | 1             | 5            | 4,203          | 3·2   | 135·4 |
|                                     | Ballymote .....             | 2             | 17           | 6,924          | 3·3   | 228·0 |
|                                     | Kerwood .....               | 1             | 5            | 5,321          | 3·7   | 196·8 |
|                                     | Lynn Valley .....           | 2             | 9            | 6,448          | 4·1   | 265·3 |
|                                     | Beachville .....            | 4             | 69           | 6,654          | 3·4   | 226·8 |
|                                     | Brooksdale .....            | 1             | 12           | 7,462          | 3·3   | 247·4 |
|                                     | Burgessville .....          | 9             | 86           | 8,361          | 3·1   | 260·2 |
|                                     | Cassel .....                | 7             | 87           | 7,244          | 3·3   | 242·0 |
|                                     | E. and W. Oxford .....      | 13            | 131          | 6,816          | 3·2   | 224·0 |
|                                     | German Union .....          | 3             | 64           | 6,444          | 3·4   | 223·8 |



## SESSIONAL PAPER No. 15a

Table IV.—Comparisons of Average Yields of Herds Recorded for the Full Period of Lactation in the Province of Ontario, 1911—*Concluded*.

| Electoral District.                          | Name of Association.       | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |       |
|--|----------------------------|---------------|--------------|----------------|-------|-------|
|  |                            |               |              | Milk.          | Test. | Fat.  |
|  |                            |               |              | Lbs.           |       | Lbs.  |
| Western Ontario— <i>Con.</i><br>Oxford ..... | Hickson. ....              | 6             | 77           | 6,083          | 3·5   | 217·8 |
|  | Innerkip.....              | 5             | 64           | 8,155          | 3·3   | 273·7 |
|  | N. Oxford, weights only... | 2             | 27           | 7,197          |       |       |
|  | Norwich Gore.....          | 6             | 48           | 6,895          | 3·1   | 217·1 |
|  | Norwich Jc.....            | 3             | 25           | 6,128          | 3·0   | 186·7 |
|  | Spring Creek.....          | 9             | 112          | 7,442          | 3·4   | 254·7 |
|  | Thamesford.....            | 1             | 11           | 6,171          | 3·2   | 199·6 |
|  | Uniondale. ....            | 8             | 74           | 6,943          | 3·2   | 228·2 |
|  | Virtue.....                | 10            | 85           | 5,324          | 3·4   | 182·2 |
|  | Perth. ....                |               |              |                |       |       |
| Perth. ....                                  | Avonbank. ....             | 5             | 54           | 6,930          | 3·5   | 246·7 |
|  | Weights only.....          | 1             | 9            | 7,273          |       |       |
|  | Black Creek.....           | 7             | 64           | 7,738          | 3·3   | 260·2 |
|  | Weights only.....          | 2             | 30           | 7,681          |       |       |
|  | Elmbank.....               | 5             | 53           | 6,923          | 3·2   | 226·5 |
|  | Elma.....                  | 10            | 114          | 5,217          | 3·5   | 186·1 |
|  | St. Marys.....             | 4             | 27           | 6,943          | 3·5   | 247·2 |
|  | Wallace.....               | 1             | 12           | 7,332          | 3·3   | 243·2 |
| Welland .....                                | Bertie. ....               | 14            | 81           | 5,900          | 3·7   | 223·7 |
|  | Point Abino.....           | 11            | 45           | 5,382          | 3·5   | 191·3 |
| Wellington. ....                             | Guelph. ....               | 1             | 6            | 5,523          | 3·4   | 188·7 |

NOTE.—This table, and the similar table for each province, contains only a partial list of all the cows recorded during the year. A very great many more records were received but could not be included in this table of total yield for the full period of lactation because they were only records of four or five months and hence were incomplete.

Records should be kept of each cow for the full milking period.

One of the first points noticeable in this table is the fact that some herds in Eastern Ontario are making good records: Prescott, Lanark, Lansdowne, Central Smith and Norwood are well over the 7,000 pounds mark. Such yields put to blush the records from Glengarry of only 4,210 and 4,585 pounds of milk per cow. The average of 277 pounds of fat in the herd of 24 cows at Norwood should encourage greater activity in increasing the yield through weighing and sampling so as to know which cows to dispose of and which to retain.

The highest average herd test is 4·1 per cent of fat from 9 cows at Lynn Valley, the lowest is 2·8 from 5 cows at Bluevale. In this herd there are only 2 tests of 3·2 per cent of fat in July, the other cows all test 3·0 or less.

Among the 21 cows grouped at Star that average only 3·0 test there are individual monthly tests of 3·6, 4·0 and even 4·5 per cent of fat, but these are completely offset by comparatively large yields of milk testing only 2·6, 2·5, 2·3 and 2·0 per cent of fat.

In the average yield of 6,132 pounds of milk and 211 pounds of fat, from 2,927 cows there are included such remarkable extremes as 3,070 pounds of milk and 101 pounds of fat, and 12,200 pounds of milk and 474 pounds of fat. This indicates very clearly that a simple knowledge of the average production cannot possibly satisfy the wideawake dairyman, he needs knowledge of each individual cow's production.

The records of a few scattered cows are remarkable for their short milking period, many dried off after only 5 or 6 months' flow. Others show a reasonable season's work of 10 and 10½ months.



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One strong argument in favour of weighing each milking is found in the satisfactory record at Mapleton of 9,175 pounds of milk in a herd of 18 grade cows, including 8,351 pounds of milk from a 2 year old.

A good average of 8,202 pounds of milk, 3.3 test and 275 pounds of fat from 16 cows is found in a herd at Milton; this includes the yields of five heifers. The highest yield in the herd is 12,390 pounds of milk and 406 pounds of fat from an 8 year old.

There are not many herds recorded in which the average yield of milk is over 200 pounds of fat for each cow, there generally being one or two individuals that score below that. One of those that do go over that mark is found at Prescott, where 10 cows average 7,478 pounds of milk, 3.2 test, 242.9 pounds of fat, the lowest yield being 214.6 pounds of fat. Within a few miles of this is another herd where only one cow gives over 200 pounds of fat, the rest in the herd of 18 cows are all below that yield.





Two views of the Quebec Seminary's "Little Farm" at St. Joachim, one of the oldest dairy farms in North America.







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TABLE V.—COST OF PRODUCING MILK AND FAT IN TEN HERDS, 1911, PETERBORO' AND OXFORD COUNTIES, ONTARIO.

| Breed.                         | No. of Herds. | No. of Cows. | AVERAGE YIELD PER COW. |           | Average Cost of Feed per Cow. | COST OF PRODUCTION. |             | Value of Fat at 25 cts. per lb. | Profit Over Cost of Feed per Cow. |
|--------------------------------|---------------|--------------|------------------------|-----------|-------------------------------|---------------------|-------------|---------------------------------|-----------------------------------|
|                                |               |              | Lbs. Milk.             | Lbs. Fat. |                               | Milk per 100 lbs.   | Fat per lb. |                                 |                                   |
| Holstein grades.....           | 3             | 40           | 8,443                  | 284       | \$ cts. 47 48                 | cts. 56·2           | cts. 16·7   | \$ cts. 71 12                   | \$ cts. 23 64                     |
| Ayrshire and Ayrshire grades.. | 3             | 62           | 6,911                  | 254       | 42 46                         | 61·5                | 16·7        | 63 50                           | 21 04                             |
| Shorthorn grades .....         | 4             | 39           | 5,465                  | 196       | 35 76                         | 65·5                | 18          | 49 12                           | 13 36                             |

RECORD OF TWO HERDS, OXFORD COUNTY, 1911.

|                       |   |    |       |     |       |      |      |       |       |
|-----------------------|---|----|-------|-----|-------|------|------|-------|-------|
| Holstein grades.....  | 1 | 17 | 9,434 | 310 | 50 80 | 53·9 | 16·3 | 77 50 | 26 70 |
| Shorthorn grades..... | 1 | 11 | 4,150 | 153 | 26 65 | 64   | 17·3 | 38 25 | 11 60 |



From this table No. V it is immediately apparent what a remarkably wide variation there is in the average yield of milk and fat per cow, in the income per cow, in the cost of feed per cow and in the profit over the cost of feed. Where the cost of feed is lowest the cost of production is high and the profit is low.

The striking fact is this, that though the cost of feed may be as high as \$50.85 per cow *the profit is also high*. In fact the highest profit shown in the table, \$26.70 per cow, is just precisely where the cost of feed is highest. No better illustration could possibly be wanted of the immense benefit resulting from selecting cows on their actual records which are a positive guide as to individual capacity of producing milk and fat at a profit.

The figures in this table are based on the information supplied by the owners of the herds.

TABLE VI.—Summary of Average Yields of Herds for the Full Period of Lactation in the Province of Quebec, 1911.

| Full Period of Lactation. | No. of Associations. | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |           |
|---------------------------|----------------------|---------------|--------------|----------------|-------|-----------|
|                           |                      |               |              | Lbs. Milk.     | Test. | Lbs. Fat. |
| Weights and tests.....    | 37                   | 185           | 2,036        | 4,564          | 3·9   | 181·7     |
| Weights only.....         | 12                   | 15            | 150          | 5,127          | ..... | .....     |
| Total .....               | 49                   | 200           | 2,186        | .....          | ..... | .....     |

TABLE VII.—Comparisons of Average Yields of Herds Recorded for the Full Period of Lactation in the Province of Quebec, 1911.

| Electoral District. | Name of Association.                           | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |       |
|---------------------|--|---------------|--------------|----------------|-------|-------|
|                     |  |               |              | Milk.          | Test. | Fat.  |
|                     |  |               |              | Lbs.           |       | Lbs.  |
| Brome .....         | Adamsville.....                                | 4             | 53           | 4,201          | 3·8   | 160·5 |
|                     | Foster.....                                    | 2             | 31           | 4,594          | 3·9   | 182·3 |
|                     | Knowlton.....                                  | 14            | 134          | 3,794          | 3·9   | 150·6 |
| Bagot.....          | St. Liboire, weights only..                    | 1             | 8            | 4,553          |       |       |
|                     | Ste. Rosalie .....                             | 4             | 32           | 6,008          | 4·2   | 257·4 |
|                     | Weights only. ....                             | 1             | 12           | 8,196          |       |       |
|                     | Upton, weights only .....                      | 1             | 11           | 4,967          |       |       |
| Berthier... ..      | Cap St. Gabriel .....                          | 6             | 53           | 4,960          | 4·0   | 203·3 |
| Chateauguay.....    | Ormstown .....                                 | 1             | 18           | 6,947          | 4·7   | 328·6 |
| Compton... ..       | Compton.....                                   | 4             | 58           | 5,250          | 3·9   | 209·1 |
|                     | Martinville.....                               | 1             | 9            | 3,096          | 3·7   | 115·0 |
| Kamouraska.. ..     | St. Germain.....                               | 3             | 22           | 4,472          | 4·0   | 181·2 |
| L'Assomption. ....  | L'Assomption, weights only                     | 1             | 2            | 5,571          |       |       |
| Labelle.....        | St. André Avellin, weights only. ....          | 1             | 14           | 3,332          |       |       |
|                     | St. Edouard de Napierville, weights only ..... | 1             | 12           | 6,331          |       |       |
| L'Islet.....        | St. Aubert, weights only..                     | 2             | 18           | 4,301          |       |       |
|                     | L'Islet.....                                   | 5             | 22           | 2,874          | 4·1   | 119·2 |
| Lotbinière.....     | Village des Aulnaies.....                      | 7             | 51           | 3,473          | 3·7   | 131·0 |
|                     | Ste. Emilie .....                              | 12            | 103          | 4,189          | 4·3   | 179·9 |



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TABLE VII.—Comparisons of Average Yields of Herds Recorded for the Full Period of Lactation in the Province of Quebec, 1911—*Concluded*.

| Electoral District. | Name of Association.                    | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |       |
|---------------------|---|---------------|--------------|----------------|-------|-------|
|                     |   |               |              | Milk.          | Test. | Fat.  |
|                     |   |               |              | Lbs.           |       | Lbs.  |
| Missisquoi.....     | St. Armand.....                         | 4             | 70           | 5,690          | 4.0   | 228.4 |
|                     | Weights only.....                       | 1             | 26           | 5,089          |       |       |
|                     | Cowansville.....                        | 10            | 165          | 5,040          | 4.0   | 203.4 |
|                     | Clarenceville.....                      | 1             | 8            | 4,898          | 3.6   | 180.1 |
|                     | Dunham.....                             | 1             | 7            | 3,342          | 4.0   | 136.2 |
|                     | Dairy Valley.....                       | 5             | 54           | 5,001          | 3.4   | 178.9 |
| Montcalm.....       | Ruisseau St. Georges, weights only..... | 1             | 9            | 5,948          |       |       |
| Montmagny.....      | Cap St. Ignace.....                     | 6             | 46           | 3,421          | 3.8   | 131.4 |
|                     | St. Pierre, weights only...             | 2             | 14           | 4,678          |       |       |
|                     | St. Thomas.....                         | 4             | 30           | 4,433          | 4.0   | 181.1 |
| Montmorency.....    | St. Joachim.....                        | 11            | 242          | 3,600          | 4.0   | 144.5 |
| Richmond.....       | Richmond & Melbourne...                 | 3             | 34           | 5,203          | 3.9   | 206.9 |
|                     | Shipton.....                            | 1             | 2            | 6,130          | 4.1   | 251.5 |
| Rouville.....       | St. Cesaire, weights only..             | 1             | 10           | 4,885          |       |       |
| Shefford.....       | South Stukeley.....                     | 3             | 41           | 3,886          | 3.4   | 169.3 |
|                     | West Shefford.....                      | 6             | 124          | 3,979          | 4.0   | 152.9 |
| Stanstead.....      | Coaticook.....                          | 2             | 23           | 5,186          | 3.9   | 202.4 |
|                     | Dixville.....                           | 2             | 16           | 4,166          | 4.0   | 167.8 |
|                     | Hatley Centre.....                      | 1             | 13           | 5,612          | 3.5   | 200.2 |
|                     | St. Herménégilde.....                   | 3             | 40           | 3,734          | 3.9   | 148.3 |
|                     | North Hatley.....                       | 6             | 41           | 4,607          | 3.7   | 172.1 |
| St. Hyacinthe.....  | Dairy School.....                       | 8             | 124          | 4,901          | 4.1   | 201.4 |
|                     | St. François.....                       | 16            | 133          | 4,415          | 4.0   | 179.8 |
|                     | Grand Rang.....                         | 6             | 56           | 4,708          | 3.9   | 183.3 |
|                     | St. Hyacinthe le Confesseur             | 9             | 66           | 4,574          | 4.1   | 188.8 |
|                     | Point du Jour.....                      | 5             | 34           | 4,389          | 4.2   | 183.9 |
| St. Maurice.....    | St. Thomas d'Aquin.....                 | 6             | 58           | 5,473          | 4.1   | 226.3 |
|                     | Point du Lac.....                       | 2             | 17           | 4,555          | 4.0   | 173.8 |
| Temiscouata.....    | Ste. Françoise weights only             | 2             | 14           | 3,681          |       |       |
| Wright.....         | Ste. Cecile de Masham....               | 1             | 6            | 3,069          | 3.6   | 113.2 |

See Note at foot of Table IV.

The extremes that arrest attention in this table are 22 cows at L'Islet with an average production of only 2,874 pounds of milk and 119.2 pounds of fat, and 18 cows at Ormstown with an average production of 6,947 pounds of milk, 4.7 test, 328.6 pounds of fat.

With milk valued at \$1 per 100 pounds the difference in the gross receipts amounts \$40.73 per cow.

There is also a marked difference between the average yield of 3,600 pounds of milk from 242 cows at St. Joachim, and 5,040 pounds of milk from 165 cows at Cowansville.

In several herds the difference runs as high as 2,500 pounds of milk and 100 pounds of fat between the yield of the best cow and that of the poorest cow in the same herd, comparing only cows five years old and upwards, not heifers.

There are many mature cows included in this table giving only 3,500 pounds of milk and 160 pounds of fat, but on the other hand there are several good yields of 7,300 pounds of milk and 270 pounds of fat.

One of the best yields is 9,230 pounds of milk and 376 pounds of fat from a 4-year old at Cowansville, while one cow at Ormstown gives 10,395 pounds of milk and 503 pounds of fat.



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In two adjoining herds at Dairy Valley one 3-year old gives only 99 pounds of fat while another gives 197 pounds of fat.

Some old cows seem to be scarcely worth keeping, cows 13 and 14 years old giving only 138 and 158 pounds of fat. One 12 years old gave only 52 pounds of fat.

In many herds the individual production runs all the way from 79 to 212 pounds of fat, but in some herds there is remarkably even production, for instance seven cows at St. Francois, where the lowest yield is 195 pound of fat and the highest 236 pounds of fat, with an average of 212.9 pounds.

Another type of even production is found at Village des Aulnaies where the yields vary from 134 to 157 pounds of fat, the six cows averaging only 141.6 pounds of fat.

In contrast to this are herds of eight and thirteen cows where not a single animal yields over 179 pounds of fat, the herd average running at 3,607 pounds of milk, 4.1 test and 149.5 pounds of fat. In this particular herd the two 3-year old heifers have better yields than the six and eight year olds.

One noticeably good herd average is found at St. Thomas d'Aquin, 14 cows giving 7,188 pounds of milk, 4.3 test, 309.1 pounds of fat. Another herd, one of 12 cows, in the same association averages only 4,318 pounds of milk, 3.9 test, 171 pounds of fat.

One herd of 5 cows gives a total yield of 28,510 pounds of milk and 1,116 pounds of fat, but another herd of 8 cows gives a total yield of 23,630 pounds of milk and 962 pounds of fat.

*Note the extra value of \$48.80 given by three fewer cows.* It looks like a great deal of unnecessary labour to milk, feed and care for *eight* cows, when *five* bring more income. Comparing two herds of seven cows each, one herd earns \$63.84 more than the other. In two more herds of seven cows each, one lot has a total yield of 1,426 pounds of fat, the other only 896 pounds, the one greater than the other by 59 per cent.

One cow six years old yields an income of \$77.40, another of the same age in the same herd yields only \$49.50, *a difference of \$27.90.*

At St. Thomas d'Aquin the average yield of 56 cows in six herds is 5,515 pounds of milk; the best herd of 14 cows gives 7,146 pounds of milk and 300 pounds of fat, the poorest average is 4,261 pounds of milk and 162 pounds of fat from a herd of 12 cows. With fat at 30 cents per pound the *average income per cow is \$41.40 greater* with the best herd. In one herd the best cow yields 363 pounds of fat and the poorest cow only 176 pounds, *a difference in value of \$56.10.*

A scrutiny of the records at St. Hyacinthe, Que., shows that 141 cows gave less than 4,000 pounds of milk during their complete period of lactation. Out of the 141 cows only 38 were 2 year-olds, and 28 were 3 year-olds; the ages of the remainder run from 4 to 17. Out of the 141 cows, 32 gave less than 3,000 pounds of milk. One cow, 14 years old, gave only 1,840 pounds of milk.

Some recent records in Scotland showed that cows over 10 years old proved better milkers than cows under 10. One cow aged 20 gave 8,780 pounds of milk testing 3.7. In one herd of 12 cows in Ontario, the five oldest, ranging in age from 11 to 13 were far heavier producers than the other seven.

This again goes to prove that it is not a question of applying general rules of age or breed to a modern herd of milch cows, but it is of paramount importance to ascertain *each individual* yield of milk and fat.

In classifying some 2 year-old heifers in British Columbia in the report of the Dairy Division for 1909 it may be noted, in contrast, that 38 out of 64 heifers gave over 4,000 pounds of milk, and 23 out of the 64 gave over 225 pounds of fat. A reasonable expectation from a heifer is a yield of 4,500 pounds of milk or 200 pounds of fat.



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TABLE VIII.—PROVINCE of Quebec.—Weights only.

Contrasts between the Best and the Poorest Cow in the Same Herd in Six Associations.

| Association.             | AVERAGE YIELD OF HERD. |               | BEST YIELD.   |      | POOREST YIELD. |      | Difference between best and poorest yield. |
|--------------------------|------------------------|---------------|---------------|------|----------------|------|--|
|                          | No. of Cows.           | Lbs. of Milk. | Lbs. of Milk. | Age. | Lbs. of Milk.  | Age. | Lbs. Milk.                                 |
| St. André Avellin.....   | 14                     | 3,332         | 5,801         | 9    | 1,808          | 4    | 3,993                                      |
| St. Aubert.....          | 15                     | 3,500         | 4,430         | 5    | 2,220          | 14   | 2,210                                      |
| St. Cesaire.....         | 10                     | 4,885         | 5,715         | 8    | 4,098          | 4    | 1,617                                      |
| St. Edouard.....         | 12                     | 5,331         | 8,029         | 6    | 5,030          | 3    | 2,999                                      |
| Ruisseau St. Georges ... | 9                      | 5,948         | 8,080         | 7    | 4,130          | 7    | 3,950                                      |
| Ste. Rosalie.....        | 12                     | 8,196         | 11,246        | 5    | 5,647          | 3    | 5,599                                      |

The average difference in yield between the best and the poorest cow in these six herds is 3,395 pounds of milk.

There are very clear cut differences (a) between the average herd yields of 3,332 and 8,196 pounds of milk, (b) between the yields of the best cows, 4,430 and 11,246 pounds of milk, and (c) between the yields of the poorest cows, 1,808 and 5,647 pounds of milk.

There are three points worth noting in this table.

1. The good record of 11,246 pounds of milk made by the 5 year old cow at Ste. Rosalie. (There are two other cows in this herd giving over 10,300 pounds of milk.)

2. The good yield of the poorest cow in this same Ste. Rosalie herd, as well as the yield of 5,030 pounds of milk from the other 3 year old in the herd at St. Edouard.

3. The two poorest yields of 1,808 and 2,220 pounds of milk respectively are from cows 4 and 14 years old.

Such poor specimens of cows might well be classed elsewhere than in a modern dairy herd.

TABLE IX.—Results of Selection in Breeding. Herd at Cowansville, Que.

| Year.              | SUSIE,<br>MOTHER OF BOTH. |       |             | BLOSSOM.      |       |             | NELLIE.       |       |             |
|--------------------|---------------------------|-------|-------------|---------------|-------|-------------|---------------|-------|-------------|
|                    | Milk.                     | Fat.  | Age.        | Milk.         | Fat.  | Age.        | Milk.         | Fat.  | Age.        |
|                    | Lbs.                      | Lbs.  |             | Lbs.          | Lbs.  |             | Lbs.          | Lbs.  |             |
| 1906.....          | 6,990                     | 355   | 8           | 4,505         | 206   | 2           |               |       |             |
| 1907.....          | 8,150                     | 418   | 9           | 5,405         | 293   | 3           | 4,075         | 178   | 2           |
| 1908.....          | 7,505                     | 386   | 10          | 6,896         | 365   | 4           | 4,475         | 219   | 3           |
| 1909.....          | 7,548                     | 360   | 11          | 8,126         | 407   | 5           | 6,375         | 313   | 4           |
| 1910.....          | 7,603                     | 357   | 12          | 6,894         | 350   | 6           | 7,149         | 333   | 5           |
| 1911.....          | 5,542                     | 266   | 13          | 7,242         | 361   | 7           | 6,738         | 312   | 6           |
|                    | Lbs. of Milk.             | Test. | Lbs. of Fat | Lbs. of Milk. | Test. | Lbs. of Fat | Lbs. of Milk. | Test. | Lbs. of Fat |
| Average Yield..... | 7,223                     | 4.9   | 357         | 6,511         | 5.0   | 331         | 5,762         | 4.7   | 271         |



The yield of a fairly good cow and two of her progeny are here shown, indicating why a good cow is worth keeping if an attempt is being made to build up a dairy herd with records of production as a guide.

TABLE X.—SUMMARY of Average Yields of Herds for the Full Period of Lactation in the Province of Nova Scotia, 1911.

| Full Period of Lactation. | Number of Associations | Number of Herds. | Number of Cows. | AVERAGE YIELD. |       |              |
|---------------------------|------------------------|------------------|-----------------|----------------|-------|--------------|
|                           |                        |                  |                 | Lbs. of Milk   | Test. | Lbs. of Fat. |
| Weights and Tests. ....   | 7                      | 23               | 129             | 4,524          | 4·3   | 198·5        |

TABLE XI.—COMPARISONS of Average Yields of Herds Recorded for the Full Period of Lactation in the Province of Nova Scotia, 1911.

| Electoral District. | Name of Association. | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |       |
|---------------------|----------------------|---------------|--------------|----------------|-------|-------|
|                     |                      |               |              | Milk.          | Test. | Fat.  |
|                     |                      |               |              | Lbs.           |       | Lbs.  |
| Colchester. ....    | Brookfield. ....     | 1             | 7            | 3,978          | 3·6   | 145·0 |
|                     | Tatamagouche. ....   | 1             | 7            | 5,344          | 4·4   | 237·2 |
| Kings. ....         | Kingston. ....       | 2             | 17           | 5,529          | 4·0   | 222·0 |
| Pictou. ....        | Durham. ....         | 3             | 19           | 3,251          | 4·5   | 146·5 |
|                     | Salt Springs. ....   | 3             | 19           | 3,429          | 4·7   | 164·0 |
|                     | Scotsburn. ....      | 9             | 44           | 4,445          | 4·2   | 190·7 |
| Yarmouth. ....      | Yarmouth. ....       | 4             | 16           | 5,693          | 5·0   | 284·0 |

TABLE XII.—SUMMARY of Average Yields of Herds for the Full Period of Lactation in the Province of New Brunswick, 1911.

| Full Period of Lactation. | No. of Associations | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |       |
|---------------------------|---------------------|---------------|--------------|----------------|-------|-------|
|                           |                     |               |              | Milk.          | Test. | Fat.  |
|                           |                     |               |              | Lbs.           |       | Lbs.  |
| Weights and Tests. ....   | 5                   | 16            | 124          | 4,546          | 3·9   | 179·3 |
| Weights only. ....        | 1                   | 1             | 6            | 6,151          |       |       |



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TABLE XIII.—COMPARISONS of Average Yields of Herds Recorded for the Full Period of Lactation in the Province of New Brunswick, 1911.

| Electoral District.     | Name of Association.         | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |       |
|-------------------------|------------------------------|---------------|--------------|----------------|-------|-------|
|                         |                              |               |              | Milk.          | Test. | Fat.  |
|                         |                              |               |              | Lbs.           |       | Lbs.  |
| Kings. ....             | Penobsquis.....              | 7             | 67           | 4,532          | 4.4   | 201.6 |
|                         | Sussex.....                  | 1             | 1            | 4,130          | 2.5   | 104.1 |
|                         | Victoria Mills .....         | 6             | 37           | 4,287          | 3.8   | 165.8 |
| Sunbury and Queens..... | Welsford.....                | 1             | 10           | 5,453          | 4.8   | 266.3 |
| Westmoreland.....       | Petitcodiac.....             | 1             | 9            | 4,331          | 3.6   | 159.0 |
|                         | Salisbury, weights only .... | 1             | 6            | 6,151          |       |       |

TABLE XIV.—SUMMARY of Average Yields of Herds for the Full Period of Lactation in the Province of Prince Edward Island, 1911.

| Full Period of Lactation. | No. of Associations | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |       |
|---------------------------|---------------------|---------------|--------------|----------------|-------|-------|
|                           |                     |               |              | Milk.          | Test. | Fat.  |
|                           |                     |               |              | Lbs.           |       | Lbs.  |
| Weights and Tests. ....   | 10                  | 101           | 669          | 4,276          | 3.8   | 163.4 |
| Weights only.....         | 2                   | 2             | 23           | 5,568          |       |       |
|                           |                     |               | 692          |                |       |       |

TABLE XV.—COMPARISONS of Average Yields of Herds Recorded for the Full Period of Lactation in the Province of Prince Edward Island, 1911.

| Electoral District. | Name of Association.         | No. of Herds. | No. of Cows. | AVERAGE YIELD.  |       |                |
|---------------------|------------------------------|---------------|--------------|-----------------|-------|----------------|
|                     |                              |               |              | Pounds of Milk. | Test. | Pounds of Fat. |
| Prince.....         | Central Lot 16 weights only. | 1             | 13           | 4,894           |       |                |
|                     | Dunk River. ....             | 27            | 193          | 3,761           | 3.7   | 140.9          |
|                     | Kensington ....              | 24            | 146          | 4,167           | 3.6   | 153.9          |
|                     | North Tryon.....             | 4             | 24           | 5,443           | 3.6   | 201.7          |
|                     | Summerside weights only...   | 1             | 10           | 6,243           |       |                |
|                     | " weights and tests          | 1             | 6            | 3,655           | 3.3   | 122.3          |
| Queens... ..        | Crapaud.....                 | 11            | 76           | 5,919           | 3.8   | 225.4          |
|                     | Emerald.....                 | 1             | 10           | 4,635           | 3.8   | 180.2          |
|                     | Marshfield.....              | 2             | 7            | 3,741           | 3.7   | 138.9          |
|                     | New Glasgow.....             | 2             | 9            | 3,271           | 3.6   | 120.6          |
|                     | North Wiltshire.....         | 1             | 6            | 3,927           | 5.1   | 201.2          |
|                     | Park Corner.....             | 23            | 192          | 4,244           | 3.5   | 119.2          |



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TABLE XVI.—SUMMARY of Average Yields of Herds for the Full Period of Lactation in the Province of British Columbia, 1911.

| Full period of Lactation. | No. of Associations. | No. of Herds. | No. of Cows. | AVERAGE YIELD.  |       |                |
|---------------------------|----------------------|---------------|--------------|-----------------|-------|----------------|
|                           |                      |               |              | Pounds of Milk. | Test. | Pounds of Fat. |
| Weights & Tests.....      | 4                    | 41            | 364          | 5,795           | 4·0   | 234·0          |
| Weights only.....         | 1                    | 1             | 15           | 7,055           |       |                |

TABLE XVII.—COMPARISONS of Average Yields of Herds Recorded for the Full Period of Lactation in the Province of British Columbia, 1911.

| Electoral District.  | Name of Association.        | No. of Herds. | No. of Cows. | AVERAGE YIELD.  |       |                |
|----------------------|-----------------------------|---------------|--------------|-----------------|-------|----------------|
|                      |                             |               |              | Pounds of Milk. | Test. | Pounds of Fat. |
| Nanaimo.....         | Cowichan.....               | 28            | 212          | 5,624           | 4·1   | 233·1          |
|                      | Nanaimo.....                | 7             | 38           | 5,121           | 4·1   | 226·5          |
| New Westminster..... | Chilliwack weights only.... | 1             | 15           | 7,055           |       |                |
|                      | Edenbank.....               | 3             | 88           | 6,956           | 3·5   | 246·8          |
| Islands.....         | The Islands.....            | 3             | 26           | 5,481           | 4·1   | 229·6          |

TABLE XVIII.—Individual Herds. 1911.

| Full period of Lactation. | No. of Herds. | No. of Cows. | AVERAGE YIELD.  |       |                |
|---------------------------|---------------|--------------|-----------------|-------|----------------|
|                           |               |              | Pounds of Milk. | Test. | Pounds of Fat. |
| Weights and Tests.....    | 5             | 34           | 3,928           | 3·4   | 134·5          |
| Weights only.....         | 21            | 215          | 5,867           |       |                |



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TABLE XIX.—SUMMARY of Average Monthly Yields, 1911.

| Month and Province.               | Total<br>Number<br>of Cows. | AVERAGE YIELD. |       |       |
|-----------------------------------|-----------------------------|----------------|-------|-------|
|                                   |                             | Milk.          | Test. | Fat.  |
|                                   |                             | Lbs.           |       | Lbs.  |
| January—                          |                             |                |       |       |
| Nova Scotia.....                  | 93                          | 572            | 4.5   | 25.9  |
| British Columbia.....             | 315                         | 576            | 4.4   | 25.2  |
| Prince Edward Island.....         | 147                         | 621            | 3.8   | 23.8  |
| New Brunswick.....                | 79                          | 505            | 4.5   | 23.2  |
| Ontario.....                      | 580                         | 600            | 3.6   | 21.7  |
| Quebec.....                       | 372                         | 469            | 4.2   | 19.8  |
| Sundry.....                       | 8                           | 727            | 3.5   | 25.3  |
| General average yield.....        | 1,594                       | 561            | 4.0   | 22.5  |
| General average weights only..... | 379                         | 535            | ..... | ..... |
| February—                         |                             |                |       |       |
| Nova Scotia.....                  | 94                          | 600            | 4.4   | 26.4  |
| British Columbia.....             | 319                         | 611            | 4.3   | 26.0  |
| New Brunswick.....                | 80                          | 567            | 4.5   | 25.5  |
| Prince Edward Island.....         | 111                         | 707            | 3.6   | 25.2  |
| Ontario.....                      | 512                         | 685            | 3.5   | 24.2  |
| Quebec.....                       | 328                         | 539            | 4.0   | 21.9  |
| Sundry.....                       | 18                          | 618            | 3.5   | 21.4  |
| General average yield.....        | 1,462                       | 625            | 3.9   | 24.4  |
| General average weights only..... | 350                         | 652            | ..... | ..... |
| March—                            |                             |                |       |       |
| Prince Edward Island.....         | 134                         | 725            | 3.8   | 28.4  |
| New Brunswick.....                | 91                          | 600            | 4.5   | 27.1  |
| Nova Scotia.....                  | 105                         | 628            | 4.3   | 27.0  |
| Ontario.....                      | 712                         | 785            | 3.4   | 26.7  |
| British Columbia.....             | 320                         | 632            | 4.2   | 26.2  |
| Quebec.....                       | 488                         | 594            | 3.7   | 22.4  |
| Sundry.....                       | 20                          | 728            | 3.1   | 22.9  |
| General average yield.....        | 1,870                       | 688            | 3.7   | 25.5  |
| General average weights only..... | 457                         | 766            | ..... | ..... |
| April—                            |                             |                |       |       |
| British Columbia.....             | 380                         | 695            | 4.0   | 28.2  |
| Ontario.....                      | 1,592                       | 854            | 3.3   | 28.1  |
| Prince Edward Island.....         | 163                         | 729            | 3.7   | 27.1  |
| Nova Scotia.....                  | 130                         | 636            | 4.2   | 26.7  |
| New Brunswick.....                | 90                          | 591            | 4.3   | 25.5  |
| Quebec.....                       | 1,095                       | 598            | 3.5   | 21.3  |
| Sundry.....                       | 25                          | 651            | 3.3   | 21.5  |
| General average yield.....        | 3,475                       | 734            | 3.5   | 25.8  |
| General average weights only..... | 653                         | 766            | ..... | ..... |
| May—                              |                             |                |       |       |
| Ontario.....                      | 3,102                       | 948            | 3.2   | 30.8  |
| British Columbia.....             | 418                         | 745            | 4.0   | 29.9  |
| Nova Scotia.....                  | 174                         | 611            | 4.4   | 26.3  |
| Quebec.....                       | 2,670                       | 667            | 3.7   | 25.0  |
| Prince Edward Island.....         | 359                         | 679            | 3.5   | 23.8  |
| New Brunswick.....                | 105                         | 558            | 4.2   | 23.1  |
| Sundry.....                       | 46                          | 632            | 3.8   | 24.3  |
| General average yield.....        | 6,874                       | 796            | 3.5   | 27.9  |
| General average weights only..... | 831                         | 843            | ..... | ..... |



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TABLE XIX.—SUMMARY of Average Monthly Yields, 1911—Continued.

| Month and Province.                | Total<br>Number of<br>Cows. | AVERAGE YIELD. |       |       |
|------------------------------------|-----------------------------|----------------|-------|-------|
|                                    |                             | Milk.          | Test. | Fat.  |
|                                    |                             | Lbs.           |       | Lbs.  |
| June—                              |                             |                |       |       |
| Ontario.....                       | 4,042                       | 950            | 3·2   | 31·0  |
| British Columbia..                 | 427                         | 716            | 4·0   | 28·6  |
| Prince Edward Island ..            | 992                         | 781            | 3·6   | 28·3  |
| New Brunswick.....                 | 141                         | 650            | 4·1   | 26·6  |
| Quebec.....                        | 3,606                       | 709            | 3·7   | 26·2  |
| Nova Scotia.....                   | 359                         | 573            | 4·4   | 24·9  |
| General average yield.....         | 9,621                       | 813            | 3·5   | 28·7  |
| General average weights only. .... | 791                         | 888            | ..... | ..... |
| July—                              |                             |                |       |       |
| Ontario.....                       | 3,981                       | 788            | 3·3   | 26·1  |
| British Columbia ..                | 345                         | 651            | 3·9   | 25·8  |
| Prince Edward Island ..            | 1,080                       | 717            | 3·5   | 25·5  |
| Quebec.....                        | 3,625                       | 599            | 3·8   | 23·1  |
| Nova Scotia ..                     | 321                         | 529            | 4·2   | 22·4  |
| New Brunswick. ....                | 146                         | 555            | 3·8   | 21·6  |
| Sundry ..                          | 37                          | 619            | 3·4   | 21·4  |
| General average yield.....         | 9,535                       | 690            | 3·5   | 24·7  |
| General average weights only. .... | 727                         | 747            | ..... | ..... |
| August—                            |                             |                |       |       |
| Ontario.....                       | 3,744                       | 721            | 3·4   | 24·6  |
| British Columbia.....              | 342                         | 631            | 3·7   | 23·9  |
| Quebec.....                        | 3,358                       | 517            | 4·0   | 21·0  |
| Prince Edward Island..             | 905                         | 575            | 3·5   | 20·7  |
| New Brunswick ..                   | 133                         | 455            | 4·1   | 19·0  |
| Nova Scotia.....                   | 207                         | 433            | 4·3   | 18·9  |
| Sundry.....                        | 16                          | 632            | 3·4   | 21·5  |
| General average yield...           | 8,705                       | 613            | 3·6   | 22·6  |
| General average weights only. .... | 624                         | 698            | ..... | ..... |
| September—                         |                             |                |       |       |
| British Columbia ..                | 334                         | 610            | 3·9   | 24·3  |
| Ontario.....                       | 3,302                       | 639            | 3·6   | 23·2  |
| Quebec.....                        | 2,621                       | 480            | 4·2   | 20·4  |
| Prince Edward Island ..            | 809                         | 536            | 3·7   | 20·2  |
| Nova Scotia.....                   | 163                         | 436            | 4·5   | 20·0  |
| New Brunswick ..                   | 122                         | 409            | 4·5   | 18·5  |
| Sundry.....                        | 18                          | 565            | 3·9   | 22·1  |
| General average yield.....         | 7,369                       | 561            | 3·8   | 21·8  |
| General average weights only. .... | 615                         | 638            | ..... | ..... |
| October—                           |                             |                |       |       |
| British Columbia ..                | 331                         | 565            | 4·2   | 24·2  |
| Ontario.....                       | 2,756                       | 554            | 3·7   | 20·8  |
| Nova Scotia ..                     | 154                         | 416            | 4·5   | 19·1  |
| Quebec.....                        | 2,019                       | 418            | 4·3   | 18·2  |
| New Brunswick ..                   | 86                          | 370            | 4·8   | 18·1  |
| Prince Edward Island. .            | 641                         | 467            | 3·8   | 18·0  |
| Sundry.....                        | 15                          | 526            | 3·6   | 19·0  |
| General average yield.....         | 6,002                       | 439            | 4·0   | 19·7  |
| General average weights only. .... | 591                         | 568            | ..... | ..... |



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TABLE XIX.—SUMMARY of Average Monthly Yields, 1911—*Concluded*.

| Month and Province             | Total<br>Number of<br>Cows. | AVERAGE YIELD. |       |       |
|--------------------------------|-----------------------------|----------------|-------|-------|
|                                |                             | Milk.          | Test. | Fat.  |
|                                |                             | Lbs.           |       | Lbs.  |
| November—                      |                             |                |       |       |
| British Columbia.....          | 292                         | 570            | 4.4   | 25.4  |
| Nova Scotia.....               | 146                         | 455            | 4.5   | 20.8  |
| Ontario.....                   | 1,931                       | 467            | 3.7   | 17.5  |
| New Brunswick.....             | 75                          | 329            | 5.1   | 16.8  |
| Prince Edward Island.....      | 341                         | 397            | 4.0   | 15.9  |
| Quebec.....                    | 1,344                       | 332            | 4.4   | 14.6  |
| Sundry.....                    | 6                           | 659            | 3.4   | 22.8  |
| General average yield.....     | 4,135                       | 422            | 4.0   | 17.1  |
| General average weights only.. | 467                         | 463            | ..... | ..... |
| December—                      |                             |                |       |       |
| British Columbia.....          | 301                         | 564            | 4.4   | 25.3  |
| Nova Scotia.....               | 144                         | 503            | 4.9   | 24.9  |
| New Brunswick.....             | 71                          | 351            | 5.5   | 19.4  |
| Ontario.....                   | 1,055                       | 496            | 3.8   | 18.9  |
| Prince Edward Island.....      | 146                         | 480            | 3.8   | 18.3  |
| Quebec.....                    | 729                         | 294            | 4.7   | 13.8  |
| Sundry.....                    | 8                           | 607            | 3.7   | 22.6  |
| General average yield.....     | 2,454                       | 440            | 4.2   | 18.5  |
| General average weights only.. | 615                         | 420            | ..... | ..... |

These average monthly yields correspond very closely with those for 1910; the first six months are slightly higher, and the second six months are a little lower.

This table is arranged by provinces with the highest yield of fat given first each month. Incidentally it may be noted that the average percentage of fat in Ontario milk is never amongst the highest, while both in May and June it is down to 3.2 even when averaging the yields of 3,102 and 4,042 cows.

The total number of monthly records made during the year was 7,100 for weights only, and 63,096 for weights and tests, making a total of 70,196.

Several contrasts might be noted in examining the records composing these monthly averages. At Lansdowne, Ont., for instance, the average yield of 123 cows in July was 31.4 pounds of fat, but 78 at Point Abino, Ont., average only 21.5 pounds, practically *ten pounds* less per cow. Both of these widely different weights are included in the general average yield for July of 26.1 pounds of fat for 3,981 cows in Ontario.

Similarly at West Shefford, Que., in September 100 cows average 15.6 pounds of fat; while 53 at Ste. Rosalie, Que., average 20.2 pounds, or *13.6 pounds* more per cow. In other words, to produce a certain weight of fat, at Ste. Rosalie, 100 cows would be sufficient, but at West Shefford to produce the same weight the owners would have the cheerful task of handling not simply 100, *but 187 cows*.

It is hoped that a simple but forceful sentence like that will draw attention to the urgent need of the average dairyman working with a better dairy equipment, effecting thereby an enormous saving of muscular energy and several other valuables. The old question ‘Why is the average yield so low?’ still awaits a satisfactory answer in many localities, and the high yields being obtained should incite to better attainments on the part of many individuals both human and bovine.



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PERCENTAGE OF FAT.

TABLE XX.—AVERAGE Percentage of Fat during the Whole Year 1911, by Provinces.

| Province.                | Total Number<br>of Tests. | Total<br>Pounds of Milk. | Total<br>Pounds of Fat. | Average Test. |
|--------------------------|---------------------------|--------------------------|-------------------------|---------------|
| Ontario.....             | 27,309                    | 20,305,278               | 694,645 4               | 3 42          |
| Quebec..                 | 22,255                    | 12,324,000               | 486,620 4               | 3 94          |
| British Columbia.....    | 4,124                     | 2,628,506                | 108,389 2               | 4 12          |
| Prince Edward Island..   | 5,828                     | 3,643,713                | 133,635 2               | 3 66          |
| New Brunswick. ....      | 1,219                     | 616,402                  | 26,989 5                | 4 37          |
| Nova Scotia.....         | 2,090                     | 1,104,628                | 48,726 7                | 4 41          |
| Sundry Individuals ..... | 271                       | 175,794                  | 6,330 4                 | 3 60          |

These average tests of fat correspond very closely with those in 1910.

During 1911 the number of cows tested each month in the Dominion varied from 1,462 in February to 9,621 in June, with a total of 63,096 tests for fat made during the year. The totals of the monthly yields were 40,798,321 pounds of milk and 1,505,328.8 pounds of fat, thus indicating an average of 3.69 per cent of fat.



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Table XXI.—Average Percentage of Fat, 1911 by Months and Provinces.

| Months.      | ONTARIO.        |                 | QUEBEC          |                 | NEW BRUNSWICK.  |                 | NOVA SCOTIA.    |                 | PRINCE EDWARD ISLAND. |                 | BRITISH COLUMBIA. |                 | SUNDRI INDIVIDUAL HERDS. |                 | TOTAL.          |                 |
|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------|-----------------|-------------------|-----------------|--------------------------|-----------------|-----------------|-----------------|
|              | Number of Cows. | Aver- age Test. | Number of Cows. | Aver- age Test. | Number of Cows. | Aver- age Test. | Number of Cows. | Aver- age Test. | Number of Cows.       | Aver- age Test. | Number of Cows.   | Aver- age Test. | Number of Cows.          | Aver- age Test. | Number of Cows. | Aver- age Test. |
| January..... | 580             | 3.6             | 372             | 4.2             | 79              | 4.5             | 93              | 4.5             | 147                   | 3.8             | 315               | 4.4             | 8                        | 3.5             | 1,594           | 4.0             |
| February.... | 512             | 3.5             | 328             | 4.0             | 80              | 4.5             | 94              | 4.4             | 111                   | 3.6             | 319               | 4.3             | 18                       | 3.5             | 1,462           | 3.9             |
| March.....   | 712             | 3.4             | 488             | 3.7             | 91              | 4.5             | 105             | 4.3             | 134                   | 3.8             | 320               | 4.2             | 20                       | 3.1             | 1,870           | 3.7             |
| April.....   | 1,592           | 3.3             | 1,095           | 3.5             | 90              | 4.3             | 130             | 4.2             | 163                   | 3.7             | 380               | 4.0             | 25                       | 3.3             | 3,475           | 3.5             |
| May.....     | 3,102           | 3.2             | 2,670           | 3.7             | 105             | 4.2             | 174             | 4.4             | 359                   | 3.5             | 418               | 4.0             | 46                       | 3.8             | 6,874           | 3.5             |
| June.....    | 4,042           | 3.2             | 3,606           | 3.7             | 141             | 4.1             | 359             | 4.4             | 992                   | 3.6             | 427               | 4.0             | 54                       | 3.8             | 9,621           | 3.5             |
| July.....    | 3,981           | 3.3             | 3,625           | 3.8             | 146             | 3.8             | 321             | 4.2             | 1,080                 | 3.5             | 345               | 3.9             | 37                       | 3.4             | 9,535           | 3.5             |
| August.....  | 3,714           | 3.4             | 3,358           | 4.0             | 133             | 4.1             | 207             | 4.3             | 905                   | 3.5             | 342               | 3.7             | 16                       | 3.4             | 8,705           | 3.6             |
| September..  | 3,802           | 3.6             | 2,621           | 4.2             | 122             | 4.5             | 163             | 4.5             | 809                   | 3.7             | 334               | 3.9             | 18                       | 3.9             | 7,369           | 3.8             |
| October..... | 2,756           | 3.7             | 2,019           | 4.3             | 86              | 4.8             | 154             | 4.5             | 641                   | 3.8             | 331               | 4.2             | 15                       | 3.6             | 6,002           | 4.0             |
| November.... | 1,931           | 3.7             | 1,344           | 4.4             | 75              | 5.1             | 146             | 4.5             | 341                   | 4.0             | 292               | 4.4             | 6                        | 3.4             | 4,135           | 4.0             |
| December.... | 1,055           | 3.8             | 729             | 4.7             | 71              | 5.5             | 144             | 4.9             | 146                   | 3.3             | 301               | 4.4             | 8                        | 3.7             | 2,454           | 4.2             |



DAIRY RECORD CENTRES.

Dairy Record Centres were established in 1911 at Perth, Peterboro' and Woodstock in Ontario, at Brome and St. Hyacinthe in Quebec, and at Kensington, Prince Edward Island. In addition to paying special attention to cow testing and in many cases doing all the actual testing of milk samples himself, the recorder in charge at each centre collected various details concerning dairy herds in his vicinity, some of which are tabulated herewith. The cost of feed per cow was worked out in close consultation with each dairyman personally. This has resulted in awakening very great interest amongst such men as heretofore were feeding all cows alike, regardless of the individual production of milk and fat. Consequently these farmers may be expected now to feed more in accordance with the best practice of the skilful man who coaxes each cow to do her best, by studying the various tastes and preferences, by feeding liberally, and by not needlessly measuring out high priced meal and concentrates to cows not in possession of sufficient dairy tendency and capacity to turn feed into an adequate and paying quantity of milk and fat.

Table XXII.—Dairy Record Centres, 1911—Summary.

| Details.                               | Perth,<br>Ont. | Peterboro,<br>Ont. | Wood-<br>stock, Ont. | St.<br>Hyacinthe<br>Que. | Kensing-<br>ton,<br>P. E. I. | Totals<br>and<br>General<br>Average. |
|--|----------------|--------------------|----------------------|--------------------------|------------------------------|--------------------------------------|
| Total number of herds.....             | 38             | 60                 | 45                   | 140                      | 48                           | 331                                  |
| Total number of cows.....              | 397            | 488                | 538                  | 1,382                    | 383                          | 3,188                                |
| Average yield per cow, pounds milk...  | 4,375          | 5,078              | 5,780                | 4,011                    | 4,256                        | 4,547                                |
| Total number of acres cultivated.....  | 4,225          | 6,776              | 4,703                | 15,344                   | 4,874                        | 35,922                               |
| Average yield per acre, pounds milk..  | 411            | 365                | 661                  | 361                      | 334                          | 403                                  |
| Average number cows of per 100 acres.. | 9              | 7                  | 11                   | 9                        | 8                            | 9                                    |
| Average feed cost of 100 pounds milk.. | 76 cts.        | 72 cts.            | 69 cts.              | 71 cts.                  | 65 cts.                      | 71 cts.                              |
| Average cash receipts per cow.....     | \$43 75        | 50 78              | 57 80                | 40 11                    | 42 56                        | 45 47                                |
| Average cost of feed per cow.....      | 33 21          | 37 03              | 39 94                | 28 43                    | 27 67                        | 32 19                                |
| Average profit per cow.....            | \$10 54        | \$13 75            | \$17 86              | \$11 68                  | \$14 89                      | \$13 28                              |



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TABLE XXIII. PERTH, ONTARIO, DAIRY RECORD CENTRE, 1911.

| Herd Number. | SIRE.  |            |        | Number of Acres Cultivated Including Pasture. | Number of Cows in Herd. | BREED OF COWS. |       | Average Pound of Milk per Cow Sent to Factory. | MILK PRODUCTION.           |     | Average Cash Receipts per Cow. (See Note) | Cost of Feed per Cow. | Feed Cost of 100 lbs. Milk. | Profit per Cow over Cost of Feed. |
|--------------|--------|------------|--------|---|-------------------------|----------------|-------|--|----------------------------|-----|---|-----------------------|-----------------------------|-----------------------------------|
|              | Breed. |            | Grade. |   |                         | Pure Bred.     | Lb.   |  | Yield per Acre Cultivated. |     |   |                       |                             |                                   |
|              | Grade. | Pure Bred. |        |   |                         |                |       |  |                            |     |   |                       |                             |                                   |
| A            | .....  | H          | 2      | 89  | 11                      | H.             | H     | 3,822  | 4,322                      | 524 | \$ 43 22                                  | \$ 32 10              | \$ 0 74                     | \$ 11 12                          |
| B            | .....  | S          | 3      | 105   | 13                      | .....          | S     | .....  | 4,180                      | 517 | 41 80                                     | 36 25                 | 0 86                        | 5 55                              |
| C            | .....  | S          | 2      | 290   | 17                      | .....          | ..... | 4,760  | 5,941                      | 349 | 59 41                                     | 37 30                 | 0 62                        | 22 11                             |
| D            | S      | .....      | 3      | 135   | 10                      | A. & S.        | ..... | 2,000  | 3,800                      | 281 | 38 00                                     | 37 10                 | 0 97                        | 0 90                              |
| E            | .....  | H          | 3      | 88  | 11                      | H.             | H     | 2,211  | 5,066                      | 644 | 50 66                                     | 36 70                 | 0 72                        | 13 96                             |
| F            | .....  | H          | .....  | 82  | 13                      | H.             | ..... | .....  | 4,336                      | 689 | 43 36                                     | 37 50                 | 0 86                        | 5 86                              |
| G            | .....  | S          | 3      | 175   | 17                      | A. H. S. Her.  | ..... | 2,737  | 3,333                      | 341 | 33 33                                     | 28 10                 | 0 84                        | 5 23                              |
| H            | .....  | S          | 3      | 54  | 7                       | .....          | S     | 2,951  | 3,986                      | 516 | 39 86                                     | 32 40                 | 0 81                        | 7 46                              |
| I            | .....  | H          | 2      | 180   | 11                      | H. A. S.       | ..... | 3,205  | 5,541                      | 338 | 55 41                                     | 33 00                 | 0 59                        | 22 41                             |
| J            | H      | .....      | 3      | 91  | 8                       | Gr.            | ..... | 1,952  | 3,010                      | 264 | 30 10                                     | 28 00                 | 0 93                        | 2 10                              |
| K            | .....  | S          | 2      | 88  | 9                       | H. & A.        | ..... | 3,566  | 3,900                      | 398 | 39 00                                     | 32 27                 | 0 82                        | 6 73                              |
| L            | .....  | H          | 4      | 125   | 9                       | S. & H.        | 2 H   | 2,983  | 3,360                      | 241 | 33 60                                     | 30 91                 | 0 91                        | 2 69                              |
| M            | .....  | S          | 3      | 175   | 9                       | S.             | ..... | 3,149  | 3,871                      | 199 | 38 71                                     | 31 15                 | 0 80                        | 7 56                              |
| N            | .....  | Her        | 3      | 78  | 7                       | Gr.            | ..... | 3,566  | 4,181                      | 375 | 41 81                                     | 29 10                 | 0 69                        | 12 71                             |
| O            | S      | .....      | 3      | 90  | 7                       | Gr.            | ..... | 2,934  | 3,177                      | 258 | 31 77                                     | 26 10                 | 0 82                        | 5 67                              |
| P            | .....  | 2 H        | 3      | 300   | 15                      | S. & H.        | 2 H   | .....  | 7,565                      | 378 | 75 65                                     | 42 75                 | 0 56                        | 32 90                             |
| Q            | S      | .....      | 3      | 190   | 11                      | S. & A.        | ..... | 2,939  | 3,710                      | 214 | 37 10                                     | 36 00                 | 0 97                        | 1 10                              |
| R            | S      | .....      | 2      | 53  | 6                       | Gr. & S.       | ..... | 2,303  | 2,737                      | 309 | 27 37                                     | 20 00                 | 0 73                        | 7 37                              |
| S            | .....  | H          | .....  | 90  | 9                       | S. & Gr.       | ..... | 4,398  | 4,736                      | 473 | 47 36                                     | 37 40                 | 0 79                        | 9 96                              |
| T            | S      | .....      | .....  | 150   | 14                      | A. & G.        | ..... | 3,710  | 4,210                      | 392 | 42 10                                     | 33 00                 | 0 78                        | 9 10                              |
| U            | .....  | H          | 3      | 60  | 6                       | H. & G.        | ..... | 5,295  | 5,995                      | 599 | 59 95                                     | 38 35                 | 0 63                        | 21 60                             |
| V            | .....  | H          | 4      | 88  | 5                       | H. & G.        | ..... | 5,170  | 7,010                      | 398 | 70 10                                     | 46 30                 | 0 66                        | 23 80                             |
| W            | .....  | S          | 3      | 100   | 10                      | S. & Gr.       | ..... | 3,256  | 3,600                      | 360 | 36 00                                     | 31 00                 | 0 86                        | 5 00                              |
| X            | .....  | H          | 3      | 170   | 14                      | Gr.            | ..... | 4,016  | 4,409                      | 363 | 44 09                                     | 32 00                 | 0 72                        | 12 09                             |
| Y            | .....  | H          | 3      | 280   | 14                      | H.             | H     | 3,120  | 3,656                      | 182 | 36 56                                     | 28 50                 | 0 77                        | 8 06                              |



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In this, and the similar tables, in the columns for breed, J. stands for Jersey, H. stands for Holstein, S. stands for Shorthorn, A. stands for Ayrshire, Her. stands for Hereford, C. stands for Canadian, Gr. stands for grade of unknown breeding.

NOTE.—The value of the milk is estimated in each case at \$1 per 100 pounds. This has been done because on some of the reports received the price of hauling milk and cream to the factory has been deducted, but in others this charge has not been deducted from the price given. There are also other charges in connection with manufacturing cheese and butter such as insurance, pasteurizing whey, salaries of secretary and salesman which are deducted from the price of milk in some cases but not in others. To simplify this matter the one uniform price has been taken.

It should be observed that in the great majority of the herds considered this one price system does not affect the figures shown in the column for 'profit per cow' to any very marked degree.

Two exceptions, however, may be noted. Herd B at Perth, Ont., now shows a profit per cow, but if the factory value of milk, which was only 80 cents, had been taken there would be an apparent loss. On the contrary, herd D at St. Hyacinthe, Que., now shows a loss per cow, because milk is only valued at \$1 as explained above; but in the ordinary way this milk is valued at \$2 per 100 because it is used for city consumption and the cows fed at a correspondingly high cost.

In this table it is found that the average yield of milk varies between 2,737 and 7,565 pounds per cow, showing the remarkable difference in yield of *4,828 pounds of milk per cow*. It will be noted that this average of 7,565 pounds of milk per cow is from a herd of 15, and only two are pure bred.

In the same herd (P) the cost of feed per cow is the highest but one out of the 25 herds in the table, standing at \$42.75 per cow; but the profit per cow is the greatest, \$32.90 on the average for each of the 15 cows.

This is eminently satisfactory, particularly so when contrasted with herd D where 10 cows average *90 cents profit each*.

Such startling contrasts should serve to interest every dairyman in the district in the vital question of profit made by each individual cow in the herd.

Mr. H. W. Coleman who was in charge of the Dairy Record Centre at Perth, Ont., states that he found quite a large number of pure bred dairy sires, but these, however, have been selected in many cases without any reference to their breeding, or the performance of their fore parents.

Many animals are also disposed of for beef at the ages of 3 or 4 years instead of being exchanged to some other portion of the country.

The continuation of the 'pooling system' is a drawback to the growth of the cow testing movement. One farmer expressed himself saying 'You are working from the wrong end and swimming against the current.'

Another feature, and it is a bad one, is the tendency to dry the cows at the end of 7 months. There are some redeeming features however, one is that some of the men who are paying attention to the individual performance of their cattle are the best patrons of their respective factories. Our cow census work showed that the best feeders in the country had the highest net profit per cow. These men took samples every month, kept daily weights, and fed the meal ration according to yield of milk.

All of the men who are making intelligent application of the information furnished as a result of cow testing are making satisfactory progress and are pleased with and continuing the work from year to year.



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Table XXIV.—Some Differences in Yields, Perth, Ont., Dairy Record Centre, 1911.

| Number of Cows.     | AVERAGE YIELD.  |       |                |
|---------------------|-----------------|-------|----------------|
|                     | Pounds of Milk. | Test. | Pounds of Fat. |
| 300.....            | 5 512           | 3·6   | 195·7          |
| 150 Best.....       | 6,634           | ..... | 235            |
| 150 Poorest.....    | 4,288           | ..... | 152            |
| Good Herd— 12.....  | 8,173           | 3·4   | 284            |
| Poor Herd— 15 ..... | 3,945           | 3·8   | 149            |

If the 15 cows in the poor herd were as good as the 12 cows, the owner's *income would be increased by \$634.*

If the second 150 cows were as good as the first 150 cows the yield of milk would be more by 351,900 pounds.

*An extra 175 tons of milk* is worth a little effort to obtain.

Some grade cows included in the 300 gave better yields than pure breds.

Four herds gave poorer yields still than the one in the table.

Eight herds gave good average yields of over 6,000, 7,000 and 8,000 pounds of milk. One has a fine lot of selected cows, none giving under 5,900 pounds of milk and 244 pounds of fat.

Some of the poor cows 5, 7 and 10 years old gave only 3,800 and 3,200 pounds of milk, and 130 and 114 pounds of fat.

Note that one lot of 150 cows gave on the average *\$23.46 more per cow* than the other lot.



TABLE XXV. PETERBORO, ONT., DAIRY RECORD CENTRE, 1911.

| Herd. | SIRE.  |            |        | Number of acres Cultivated Including Pasture. | Number of Cows in Herd. | BREED OF COWS. |                            | Average Pounds of Milk per Cow sent to factory. | MILK PRODUCTION. |       | Average Cash Receipts per Cow. (See note.) | Cost of Feed of per Cow. |      | Feed Cost of 100 Lbs., Milk. | Profit or Loss per Cow over Cost of Feed. |
|-------|--------|------------|--------|---|-------------------------|----------------|----------------------------|---|------------------|-------|--|--------------------------|------|------------------------------|---|
|       | Breed. |            | Grade. |   |                         | Lb.            | Yield per Acre Cultivated. |   | \$               | cts.  |  | \$                       | cts. |                              |   |
|       | Grade. | Pure Bred. |        |   |                         |                |                            |   |                  |       |  |                          |      |                              |   |
| A     | S      |            | S      | 95  | 6                       | S              |                            |   | 5,708            | 360   | 57 08                                      | 50 12                    | 0 87 |                              | 6 96                                      |
| B     | H      |            | 150    | 9   |                         | S              |                            | 3,368   | 4,023            | 241   | 40 23                                      | 43 00                    | 1 06 | Loss 2 77                    |   |
| C     |        |            | 165    | 11  |                         | H              |                            | 5,030   | 6,376            | 425   | 63 76                                      | 43 10                    | 0 67 | 20 66                        |   |
| D     |        |            | 95     | 10  |                         | S              |                            | 5,317   | 7,027            | 739   | 70 27                                      | 38 20                    | 0 54 | 32 07                        |   |
| E     |        |            | 20     | 5   |                         | S              |                            | 3,678   | 4,488            | 1,122 | 44 88                                      | 21 25                    | 0 47 | 23 63                        |   |
| F     |        |            | 80     | 5   |                         | S              |                            | 2,195   | 2,951            | 184   | 29 51                                      | 37 95                    | 1 28 | Loss 8 44                    |   |
| G     |        |            | 216    | 8   |                         | S & A.         |                            | 3,369   | 4,244            | 157   | 42 44                                      | 37 60                    | 0 88 | 4 84                         |   |
| H     | S      |            | 87     | 8   |                         | S              |                            | 4,072   | 5,130            | 374   | 51 30                                      | 35 25                    | 0 68 | 16 05                        |   |
| I     |        |            | 120    | 13  |                         | S              |                            | 2,025   | 3,043            | 329   | 30 43                                      | 41 75                    | 1 37 | Loss 11 32                   |   |
| J     |        |            | 80     | 5   |                         | S              |                            | 2,195   | 2,951            | 184   | 29 51                                      | 37 95                    | 1 28 | Loss 8 44                    |   |
| K     |        |            | 95     | 10  |                         | S              |                            | 5,317   | 7,027            | 739   | 70 27                                      | 38 20                    | 0 54 | 32 07                        |   |
| L     | H      |            | 165    | 11  |                         | H              |                            | 5,030   | 6,376            | 425   | 63 76                                      | 43 10                    | 0 67 | 20 66                        |   |
| M     |        |            | 98     | 10  |                         | S              |                            | 4,583   | 5,085            | 519   | 50 85                                      | 41 50                    | 0 87 | 6 35                         |   |
| N     | H      |            | 80     | 7   |                         | H              |                            |   | 7,212            | 631   | 72 12                                      | 39 10                    | 0 54 | 33 02                        |   |
| O     | H      |            | 100    | 7   |                         | S & H.         |                            |   | 5,218            | 521   | 52 18                                      | 41 00                    | 0 78 | 11 18                        |   |
| P     | S      |            | 100    | 7   |                         | Gr. S. J.      |                            |   | 5,772            | 404   | 57 72                                      | 29 36                    | 0 50 | 28 36                        |   |
| Q     |        |            | 130    | 8   |                         | H. S. A.       |                            |   | 5,843            | 359   | 58 43                                      | 47 48                    | 0 81 | 10 95                        |   |
| R     |        |            | 90     | 9   |                         | A. & S.        |                            |   | 4,520            | 351   | 45 20                                      | 44 87                    | 0 90 | 0 33                         |   |
| S     | H      | S 2 H 3    | 70     | 6   |                         | S & H.         |                            |   | 6,657            | 570   | 66 57                                      | 28 85                    | 0 43 | 37 72                        |   |
| T     | H      |            | 185    | 10  |                         | H              | H                          |   | 8,671            | 144   | 86 71                                      | 43 50                    | 0 50 | 43 21                        |   |
| U     | H      |            | 50     | 6   |                         | H. A.          |                            |   | 9,164            | 1,099 | 91 64                                      | 62 75                    | 0 68 | 28 89                        |   |
| V     | H      |            | 150    | 10  |                         | S & H.         |                            | 4,156   | 5,933            | 395   | 59 33                                      | 57 50                    | 0 97 | 1 83                         |   |
| W     |        |            | 134    | 8   |                         | H              |                            | 7,508   | 7,736            | 462   | 77 36                                      | 42 00                    | 0 54 | 35 36                        |   |
| X     | H      |            | 170    | 9   |                         | H              | H                          | 4,141   | 6,172            | 326   | 61 72                                      | 36 50                    | 0 59 | 25 22                        |   |
| Y     | J      |            | 80     | 8   |                         | H. & J.        |                            | 3,670   | 5,639            | 563   | 56 39                                      | 23 25                    | 0 41 | 33 14                        |   |



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In this table of results obtained in the Peterboro' section the yield of milk per cultivated acre varies from 144 to 1,122 pounds.

The average yield of milk per cow varies from 2,951 to 9,164 pounds.

The cost of feed per cow varies between \$21.25 and \$62.75 per cow. The items of feed in the first case were put at pasture, \$5.50, roots \$4, straw \$6, corn \$2, hay \$2.50, grains 25 cents, oat sheaf \$1. In the second case the feed was put at pasture \$7, roots \$8, corn \$3, straw \$2, hay 75 cents, grain \$36.

With one herd there is a profit of 33 cents per cow, with four herds an apparent loss per cow, and with one herd a profit of \$43.21 per cow.

Mr. A. L. Andress who was in charge of the work in the Peterboro' district draws attention to a strong argument in favour of cow testing, clearly pointing out that the average dairyman who takes up cow testing may expect an average increase of at least *twenty-three dollars per cow in three years*. That is how it has actually worked out here. Mr. Andress states:

'As near as we can determine from the cow census work the average production of the cows in this district is about 3,800 pounds, while *the average production of the cows in herds tested for three years or more is 6,137 pounds of milk and 212 pounds of fat*.

A pleasing feature of the work is the interest that the boys are taking in the cow testing which will no doubt be an influence towards keeping them on the farm.

'A number of cows that had been considered very poor by their owners have proved to be very profitable, some in fact are the best in the herd.

One of our best farmers bought a cow last spring which he thought would be an excellent producer as she had every indication of being a good milker, and had been awarded first prize in the dairy class at one of the fall fairs by a government judge. But the scales showed otherwise, as this cow only gave 4,000 pounds of milk or over 2,000 less than the average of the other cows in his herd.

An instance of the wonderful difference in the cost of production of different animals in the same herd came to light recently. Taking the farmer's figures for the cost of feed for the year, one three year-old produced fat at a cost of 25 cents per pound, while another animal in the same herd of the same age, produced fat at a cost of 16 cents per pound.'



TABLE XXVI. WOODSTOCK, ONT., DAIRY RECORD CENTRE, 1911.

| Herd. | SIRE.  |        |      | Number of Acres Cultivated including Pasture. | Number of Cows in Herd. | BREED OF COWS. |                            | Average Pounds of Milk per Cow sent to Factory. | MILK PRODUCTION.       |        | Average Cash Receipts per Cow. (See note.) | Cost of Feed per Cow. | Feed Cost of 100 lb. Milk. | Profit or Loss per Cow over Cost of Feed. |
|-------|--------|--------|------|---|-------------------------|----------------|----------------------------|---|------------------------|--------|--|-----------------------|----------------------------|---|
|       | Grade. | Breed. | Age. |   |                         | Pure Bred.     | Yield per Acre Cultivated. |   | Average Yield per Cow. |        |  |                       |                            |   |
|       |        |        |      |   |                         |                |                            |   |                        | Grade. |  |                       |                            |   |
| A     | S      | ...    | 2    | 100   | 11                      | Gr. 10 s       | ...                        | 2,168   | 3,123                  | 343    | \$ 31 23                                   | \$ 38 00              | \$ 1 21                    | Loss 6 77                                 |
| B     | ...    | H      | 2    | 100   | 18                      | H. J.          | ...                        | 8,481   | 8,592                  | 1,540  | 85 92                                      | 51 00                 | 0 59                       | 34 92                                     |
| C     | H      | ...    | 1    | 100   | 12                      | H. & S.        | ...                        | 2,613   | 2,888                  | 346    | 28 88                                      | 30 00                 | 1 03                       | Loss 1 12                                 |
| D     | S      | ...    | 2    | 50  | 6                       | S.             | ...                        | 3,303   | 5,870                  | 704    | 58 70                                      | 37 50                 | 0 62                       | 21 20                                     |
| E     | ...    | H      | 2    | 100   | 12                      | S. & H.        | ...                        | 3,040   | 4,400                  | 528    | 44 00                                      | 41 90                 | 0 95                       | 2 10                                      |
| F     | ...    | S      | 2    | 130   | 17                      | 13 S.          | 4 S.                       | 5,168   | 5,595                  | 729    | 55 95                                      | 41 25                 | 0 73                       | 14 70                                     |
| G     | ...    | S      | 1    | 125   | 12                      | S.             | ...                        | 3,362   | 4,120                  | 395    | 41 20                                      | 43 00                 | 1 04                       | Loss 1 80                                 |
| H     | ...    | H      | 2    | 100   | 16                      | 12 H.          | 4 H.                       | 8,578   | 8,690                  | 1,390  | 86 90                                      | 54 00                 | 0 62                       | 32 90                                     |
| I     | ...    | H      | 4    | 97  | 15                      | ...            | H                          | 7,022   | 7,502                  | 1,160  | 75 02                                      | 49 00                 | 0 65                       | 26 02                                     |
| J     | ...    | H      | 1    | 150   | 9                       | H. & S.        | ...                        | 4,512   | 5,088                  | 305    | 50 88                                      | 46 00                 | 0 90                       | 4 88                                      |
| K     | H      | ...    | 1    | 100   | 16                      | H.             | ...                        | 5,464   | 6,490                  | 1,038  | 64 90                                      | 39 50                 | 0 60                       | 25 40                                     |
| L     | ...    | H      | 2    | 20  | 5                       | S.             | ...                        | 5,817   | 7,017                  | 1,754  | 70 17                                      | 36 50                 | 0 52                       | 33 67                                     |
| M     | ...    | H      | 2    | 105   | 17                      | H.             | ...                        | 8,868   | 9,434                  | 1,526  | 94 34                                      | 50 80                 | 0 53                       | 43 54                                     |
| N     | ...    | A      | 4    | 196   | 23                      | A.             | ...                        | 6,083   | 6,680                  | 785    | 66 80                                      | 43 10                 | 0 64                       | 23 70                                     |
| O     | ...    | H      | 4    | 150   | 7                       | S. & H.        | ...                        | 1,577   | 2,620                  | 122    | 26 20                                      | 30 50                 | 1 16                       | Loss 4 30                                 |
| P     | ...    | S      | 1    | 100   | 11                      | S.             | ...                        | 2,749   | 4,150                  | 456    | 41 50                                      | 26 55                 | 0 64                       | 14 95                                     |
| Q     | ...    | H      | 4    | 92  | 16                      | H. J. & A.     | ...                        | 4,614   | 5,659                  | 879    | 50 59                                      | 43 60                 | 0 86                       | 6 99                                      |
| R     | ...    | H      | 2    | 50  | 7                       | H.             | ...                        | 8,559   | 8,773                  | 1,228  | 87 73                                      | 43 25                 | 0 66                       | 44 48                                     |
| S     | ...    | A      | 3    | 100   | 10                      | J.             | ...                        | 2,815   | 4,020                  | 402    | 40 20                                      | 33 25                 | 0 80                       | 6 95                                      |
| T     | ...    | H      | 2    | 200   | 26                      | S. & H.        | ...                        | 4,618   | 5,100                  | 662    | 51 00                                      | 36 00                 | 0 70                       | 15 00                                     |
| U     | ...    | H      | 2    | 100   | 18                      | H. & S.        | ...                        | 5,288   | 5,522                  | 993    | 55 22                                      | 37 00                 | 0 67                       | 18 22                                     |
| V     | ...    | H      | 3    | 100   | 18                      | H.             | ...                        | 4,445   | 4,877                  | 878    | 48 77                                      | 33 75                 | 0 69                       | 15 02                                     |
| W     | ...    | H      | 4    | 88  | 10                      | H.             | ...                        | 7,275   | 7,875                  | 894    | 78 75                                      | 44 60                 | 0 56                       | 34 15                                     |
| X     | ...    | H      | 1    | 100   | 8                       | H. & D.        | ...                        | 4,132   | 5,220                  | 417    | 52 20                                      | 31 50                 | 0 60                       | 20 70                                     |
| Y     | ...    | H      | 2    | 80  | 5                       | D.             | ...                        | 2,489   | 3,429                  | 214    | 34 29                                      | 31 00                 | 0 90                       | 3 29                                      |



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In this table the yield of milk per acre is seen to vary from 214 pounds up to 1,754.

The average yield of milk per cow varies from 2,620 pounds up to 9,434 pounds.

The cost of feed varies from \$26.55 up to \$54 per cow.

With four herds there is an apparent loss per cow, herd A being particularly noticeable especially when contrasted with herd R showing a profit of \$14.48 per cow.

There is much food for serious reflection in these extraordinary variations in one of the best known dairy districts in Ontario.

The cost of feed per cow in herd P was estimated by the owner at: pasture \$9, hay \$5, grain \$6.75, roots \$1.20, corn \$1, straw \$3.60, total \$26.55.

In herd H the cost of feed was put at: pasture \$9, ensilage \$12, roots \$8, grain \$15, hay \$10, total \$54.



TABLE XXVII. ST. HYACINTHE, QUE., DAIRY RECORD CENTRE, 1911.

| Herd. | SIRE.  |             | Number of Acres Cultivated Including Pasture. | Number of Cows in Herd. | BREED OF COWS. |            | Average Pounds of Milk per Cow sent to Factory. | MILK PRODUCTION.       |                            | Average Cash Receipts per Cow. (See note.) | Cost of Feed of per Cow. | Feed Cost of 100 lbs. Milk. | Profit per Cow over Cost of Feed. |
|-------|--------|-------------|---|-------------------------|----------------|------------|---|------------------------|----------------------------|--|--------------------------|-----------------------------|-----------------------------------|
|       | Breed. | Age. Years. |   |                         | Grade.         | Pure Bred. |   | Average Yield per Cow. | Yield per Acre Cultivated. |  |                          |                             |                                   |
|       |        |             |   |                         |                |            |   |                        |                            |  |                          |                             |                                   |
| A     | A      | 2           | 90  | 9                       | A              | .....      | 4,823   | 5,980                  | Lb.                        | \$ cts.                                    | \$ cts.                  | \$ cts.                     | \$ cts.                           |
| B     | .....  | 2           | 150   | 11                      | H              | .....      | 2,391   | 2,891                  | 598                        | 59 80                                      | 28 50                    | 0 47                        | 31 30                             |
| C     | A      | 2           | 64  | 10                      | A              | .....      | 1,682   | 2,752                  | 212                        | 28 91                                      | 25 00                    | 0 86                        | 3 91                              |
| D     | .....  | 3           | 500   | 48                      | H              | H          | .....   | 5,413                  | 430                        | 27 52                                      | 23 00                    | 0 83                        | 4 52                              |
| E     | .....  | 3           | 100   | 9                       | .....          | A          | 3,214   | 6,214                  | 519                        | 54 13                                      | 58 30                    | 1 07                        | Loss 4 17                         |
| F     | A      | 1           | 66  | 6                       | .....          | .....      | 1,455   | 2,638                  | 559                        | 62 14                                      | 30 75                    | 0 49                        | 31 39                             |
| G     | H      | 2           | 75  | 7                       | .....          | .....      | 2,423   | 5,337                  | 239                        | 26 38                                      | 23 00                    | 0 87                        | 3 38                              |
| H     | H      | 2           | 120   | 12                      | C              | .....      | 2,160   | 2,888                  | 498                        | 53 37                                      | 27 00                    | 0 50                        | 26 37                             |
| I     | A      | 2           | 120   | 10                      | H              | .....      | 3,225   | 5,345                  | 288                        | 28 88                                      | 25 00                    | 0 86                        | 3 88                              |
| J     | H      | 2           | 170   | 14                      | H              | .....      | 2,498   | 3,120                  | 445                        | 53 45                                      | 32 00                    | 0 59                        | 21 45                             |
| K     | A      | 2           | 35  | 4                       | C              | .....      | 3,833   | 3,120                  | 256                        | 31 20                                      | 26 00                    | 0 83                        | 5 20                              |
| L     | A      | 1           | 110   | 11                      | A              | .....      | 2,099   | 5,358                  | 612                        | 53 58                                      | 24 00                    | 0 44                        | 29 58                             |
| M     | .....  | 2           | 60  | 6                       | C              | .....      | 2,738   | 3,008                  | 300                        | 30 08                                      | 26 00                    | 0 86                        | 4 08                              |
| N     | .....  | 1           | 108   | 10                      | A              | .....      | 3,711   | 4,155                  | 415                        | 41 55                                      | 29 00                    | 0 69                        | 12 55                             |
| O     | A      | 2           | 100   | 11                      | A              | .....      | 3,687   | 4,491                  | 415                        | 44 91                                      | 25 50                    | 0 56                        | 19 41                             |
| P     | .....  | 2           | 146   | 13                      | C              | .....      | 3,800   | 4,950                  | 475                        | 43 24                                      | 27 50                    | 0 63                        | 15 74                             |
| Q     | H      | 3           | 60  | 4                       | C              | .....      | 2,735   | 5,410                  | 440                        | 49 50                                      | 29 00                    | 0 58                        | 20 50                             |
| R     | A      | 1           | 90  | 8                       | A              | .....      | 3,665   | 5,140                  | 360                        | 54 10                                      | 30 00                    | 0 55                        | 24 10                             |
| S     | .....  | 1           | 120   | 12                      | A              | .....      | 2,313   | 2,938                  | 456                        | 51 40                                      | 29 00                    | 0 56                        | 22 40                             |
| T     | A      | 3           | 158   | 14                      | A              | .....      | 4,317   | 5,095                  | 293                        | 29 38                                      | 23 00                    | 0 78                        | 6 38                              |
| U     | .....  | 1           | 58  | 6                       | C              | .....      | 2,014   | 2,947                  | 451                        | 50 95                                      | 35 00                    | 0 68                        | 15 95                             |
| V     | H      | 1           | 60  | 5                       | H              | .....      | 3,345   | 4,429                  | 304                        | 29 47                                      | 23 00                    | 0 78                        | 6 47                              |
| W     | A      | 1           | 60  | 4                       | A              | .....      | 3,436   | 4,636                  | 369                        | 44 29                                      | 29 00                    | 0 65                        | 15 29                             |
| X     | H      | 1           | 90  | 4                       | A              | .....      | 1,919   | 4,636                  | 309                        | 46 36                                      | 30 00                    | 0 64                        | 16 36                             |
| Y     | .....  | 4           | 84  | 8                       | H              | .....      | .....   | 3,019                  | 167                        | 30 19                                      | 25 00                    | 0 82                        | 5 19                              |
|       |        |             |   |                         |                | .....      | .....   | 9,507                  | 905                        | 95 07                                      | 55 00                    | 0 57                        | 40 07                             |



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Table XXVIII.—St. Hyacinthe Dairy Record Centre. Full period of Lactation, 1911.—Summary.

| Branch.                            | No. of Herds. | No. of Cows. | AVERAGE YIELD. |       |       | Average Cost of Feed per Cow. |
|------------------------------------|---------------|--------------|----------------|-------|-------|-------------------------------|
|                                    |               |              | Milk.          | Test. | Fat.  |                               |
|                                    |               |              | Lbs.           |       | Lbs.  | \$ cts.                       |
| Ecole de Laiterie.. .. .           | 8             | 128          | 4,857          | 3.9   | 190.6 | 40 23                         |
| Grand Rang.. .. .                  | 6             | 53           | 4,770          | 3.9   | 186.2 | 28 05                         |
| Point du Jour.. .. .               | 6             | 46           | 4,188          | 4.1   | 173.0 | 23 35                         |
| St. Cesaire.. .. .                 | 1             | 9            | 4,858          | 4.0   | 198.6 | 25 25                         |
| St. Francois.. .. .                | 14            | 119          | 4,626          | 3.9   | 183.8 | 28 09                         |
| St. Hyacinthe le Confesseur.. .. . | 9             | 66           | 4,557          | 4.0   | 185.6 | 28 69                         |
| Ste. Rosalie.. .. .                | 5             | 43           | 6,326          | 4.0   | 254.4 | 33 68                         |
| Village St. Thomas d'Aquin.. .. .  | 6             | 56           | 5,515          | 4.0   | 223.0 | 30 09                         |
| Total and Average. ....            | 55            | 520          | 4,891          | 4.0   | 195.2 | 31 35                         |

Mr. Adelard Hamel, who was in charge of the Dairy Record Centre at St. Hyacinthe, has prepared the accompanying tabular statements.

## SOME CONTRASTS AT ST. HYACINTHE, QUE.

It may be noted that the average cost of feed per cow is put at a very moderate figure. On comparing the seven different branches a wide variation is noticed. For instance the 46 cows at Point du Jour are estimated to be fed at a cost of \$23.35 each, but the 128 in the Dairy School branch average \$40.23 per cow.

The various herds composing these branches also vary considerably. At St. Thomas d'Aquin one herd is fed at an average cost of \$33.75, but another is \$22.

The average yield of milk is not proportionate to the cost of feed. In the two herds just referred to the first averages 5,190 pounds of milk and 210 pounds of fat; the second almost the same, 5,013 pounds of milk and 209 pounds of fat, with a difference in cost of feed of \$11.75 per cow.

In two herds in the Dairy School branch, both producing milk which averages 4.0 per cent of fat at a feed cost of \$25 per cow, one average is 3,741 pounds of milk per cow, the other only 2,953 pounds, a difference of 788 pounds per cow. In another two herds in the same branch one averages 283 pounds of fat at a feed cost of \$30.75, but the other averages only 196 pounds of fat at a feed cost of \$58.30, or 87 pounds less costing \$27.55 per cow more.

At Point du Jour is found a herd averaging 5,330 pounds of milk at a cost for feed of \$23; while another, at a cost of \$22 averages only 3,984 pounds or 1,346 pounds less per cow.

At St. Thomas d'Aquin 12 cows average 160 pounds of fat at a feed cost of \$28, while at a cost of \$30.60 for feed 14 cows average 299 pounds of fat. 139 pounds more for \$2.60 more feed per cow.

At Ste. Rosalie the extremes are an average production of 168 pounds of fat by 6 cows at a cost of \$24, and an average from 8 cows of 371 pounds of fat at a feed cost of \$55 per cow. In both cases the average herd test is 3.9 per cent of fat. The 6 cows have a total yield of 1,010 pounds of fat, but the 8 cows give 2,964 pounds. The 6 cows average only 4,326 pounds of milk, but the 8 cows average 9,507 pounds.



TABLE XXIX.—Differences in Yield in the 7 Branches, St. Hyacinthe, Que.

| Branch No. | No. of Cows. | AVERAGE YIELD PER COW. |       |      | Price per 100 lb. Milk. | Total Cash Receipts per cow with Butter at 25 cents per pound. |
|------------|--------------|------------------------|-------|------|-------------------------|--|
|            |              | Milk.                  | Fat.  | Fat. |                         |  |
|            |              | Lbs.                   | p. c. | Lbs. | \$ cts.                 | \$ cts.  |
| 1.....     | 56           | 5,513                  | 4·0   | 223  | 1 18                    | 65 05  |
| 2.....     | 46           | 4,188                  | 4·1   | 173  | 1 20                    | 50 26  |
| 3.....     | 53           | 4,769                  | 3·9   | 186  | 1 14                    | 54 37  |
| 4.....     | 128          | 4,857                  | 3·9   | 191  | 1 14                    | 55 37  |
| 5.....     | 119          | 4,626                  | 3·9   | 184  | 1 16                    | 53 66  |
| 6.....     | 66           | 4,557                  | 4·0   | 186  | 1 19                    | 54 23  |
| 7.....     | 43           | 6,326                  | 4·0   | 254  | 1 17                    | 74 01  |

This table shows the differences in the yields of milk and fat per cow at each of the 7 branches, and that the revenue per cow varies from \$50.26 to \$70.01, a difference of \$23.75.

TABLE XXX.—Contrast between Two Herds, one Grade, the other Pure Bred, St. Hyacinthe, Que.

Herd Number 1.

The sire and all cows are pure bred Ayrshire.

| Cow No.      | Age. | AVERAGE YIELD. |      |       | Value of Butter at 25 cts. per lb. | Profit per Cow. |
|--------------|------|----------------|------|-------|------------------------------------|-----------------|
|              |      | Milk.          | Fat. | Fat.  |                                    |                 |
|              |      | Lbs.           | %    | Lbs.  | \$ cts.                            | \$ cts.         |
| 1            | 2    | 5,180          | 4·4  | 227   | 66 25                              | 35 50           |
| 2            | 3    | 4,785          | 4·3  | 206   | 60 00                              | 29 25           |
| 3            | 4    | 6,440          | 4·1  | 266   | 77 50                              | 46 75           |
| 4            | 5    | 6,555          | 4·5  | 297   | 86 63                              | 55 88           |
| 5            | 6    | 7,885          | 4·9  | 385   | 112 25                             | 81 50           |
| 6            | 6    | 6,870          | 4·5  | 309   | 90 12                              | 59 37           |
| 7            | 10   | 7,015          | 4·1  | 291   | 84 88                              | 54 13           |
| Total.....   |      | 44,730         |      | 1,981 | 577 63                             | 362 38          |
| Average..... |      | 6,390          | 4·4  | 283   | 82 52                              | 51 00           |

|  |  |         |
|--|--|---------|
|  |  | \$ cts. |
| Average Cost of Feed per Cow.....                    |  | 30 75   |
| Average Cost of Production per 100 lbs. of Milk..... |  | 48·1    |
| " " 1 lb. of Fat.....                                |  | 10·8    |



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Herd Number 2.

The sire and all the cows are grades.

| Cow No.     | Age. | AVERAGE YIELD. |      |      | Value of Butter<br>at<br>25 cts. per lb. | Profit<br>per Cow. |
|-------------|------|----------------|------|------|--|--------------------|
|             |      | Milk.          | Fat. | Fat. |  |                    |
|             |      | Lbs.           | %    | Lbs. | \$ cts.                                  | \$ cts.            |
| 1           | 4    | 3,550          | 3·7  | 131  | 38 25                                    | 12 50              |
| 2           | 7    | 4,700          | 3·6  | 168  | 49 00                                    | 23 00              |
| 3           | 5    | 3,710          | 3·6  | 133  | 38 75                                    | 12 75              |
| 4           | 9    | 3,980          | 3·7  | 151  | 44 00                                    | 18 00              |
| 5           | 2    | 2,460          | 4·0  | 98   | 28 58                                    | 2 58               |
| 6           | 2    | 3,175          | 4·0  | 127  | 37 00                                    | 11 00              |
| 7           | 9    | 2,275          | 3·9  | 88   | 25 65                                    | 0 35 loss.         |
| Total.....  |      | 23,850         |      | 896  | 261 23                                   | 79 23              |
| Average.... |      | 3,407          | 3·79 | 128  | 37 32                                    | 11 25              |

|  |         |
|--|---------|
|  | \$ cts. |
| Average Cost of Feed per Cow.....                    | 26 00   |
| Average Cost of Production per 100 lbs. of Milk..... | 76·3    |
| "                    "          1 lb. of Fat.....    | 20·3    |

Notice the apparent loss with one 9 year-old cow in the second herd, even with the low cost of feed.

The difference in the net profit in favour of the pure breds amounts to \$39.75 per cow.

Each cow in herd No. 1 gives milk testing 4·1 or higher. Even the 2 year-old gives 227 pounds of fat, which is 59 pounds more than the best cow in herd No. 2.

It pays to get a good sire.

Table XXXI.—Showing the percentage of Cows giving Less than 4,000 pounds of Milk, excluding 2 year-old heifers—St. Hyacinthe, Que.

| Branch No. | Total Number of Cows<br>Recorded. | Number of Cows giving less<br>than 4,000 lb. Milk. | Percentage. |
|------------|-----------------------------------|--|-------------|
|            |                                   |  | %           |
| 1          | 55                                | 10   | 18·18       |
| 2          | 44                                | 16   | 36·36       |
| 3          | 50                                | 13   | 26·00       |
| 4          | 123                               | 28   | 22·76       |
| 5          | 107                               | 24   | 22·43       |
| 6          | 54                                | 11   | 20·37       |
| 7          | 40                                | 1  | 2·50        |
|            | 473                               | 102  | 21·77       |

Notice the great difference between No. 2 and No. 7.

Nearly all the herds in No. 2 have only grade sires at their head, but in No. 7 the sires are pure bred.



TABLE XXXII.—KENSINGTON, P. E. I., DAIRY RECORD CENTRE. 1911.

| Herd.  | SIRE.      |       | Number of Acres Cultivated Including Pasture. | Number of Cows in Herd. | BREED OF COWS. |            | Average Pounds of Milk per Cow sent to Factory. | PRODUCTION.            |                        |                           | Average Cash Receipts per Cow. (See Note) | Cost of Feed of Feed per Cow. | Feed Cost of 160 lbs. of Milk. | Feed Cost of 1 lb. of Fat. | Profit or Loss Per Cent Over Cost of Feed. |      |
|--------|------------|-------|---|-------------------------|----------------|------------|---|------------------------|------------------------|---------------------------|---|-------------------------------|--------------------------------|----------------------------|--|------|
|        | Breed.     | Age.  |   |                         | Grade.         | Pure Bred. |   | Average Yield per Cow. | Average Yield per Cow. | Yield per Acre cultivated |   |                               |                                |                            |  |      |
|        |            |       |   |                         |                |            |   |                        |                        |                           |   |                               |                                |                            |  |      |
| Grade. | Pure Bred. | Years |   |                         |                |            |   | Lbs. Milk.             | Lbs. Fat.              | Lbs. Milk.                | \$  | cts.                          | \$                             | cts.                       | \$   | cts. |
| A      | H          | 1H    | 90  | 13                      | Gr.            | .....      | 1,949   | 4,440                  | 165.1                  | 641                       | 44 40                                     | 21 26                         | 47                             | 12                         | 23 14                                      |      |
| B      | H          | ..... | 95  | 7                       | A.H.S.         | .....      | 2,205   | 4,044                  | 152.4                  | 298                       | 40 44                                     | 32 64                         | 80                             | 21                         | 7 80                                       |      |
| C      | H          | H     | 126   | 7                       | Gr.            | .....      | 2,461   | 3,505                  | 124.2                  | 194                       | 35 05                                     | 24 57                         | 70                             | 19                         | 10 48                                      |      |
| D      | H          | ..... | 100   | 6                       | A. & S.        | .....      | 3,059   | 4,855                  | 186.1                  | 485                       | 48 55                                     | 21 91                         | 45                             | 11                         | 26 64                                      |      |
| E      | H          | H     | 62  | 6                       | A.H.S.         | .....      | 3,720   | 5,713                  | 211.3                  | 552                       | 57 13                                     | 28 25                         | 49                             | 13                         | 28 88                                      |      |
| F      | H          | ..... | 90  | 7                       | H. & J.        | .....      | 1,641   | 4,270                  | 162.8                  | 333                       | 42 70                                     | 18 42                         | 43                             | 11                         | 24 28                                      |      |
| G      | .....      | H     | 100   | 9                       | H. & A.        | .....      | 2,262   | 4,256                  | 140.0                  | 382                       | 42 56                                     | 32 55                         | 76                             | 23                         | 10 01                                      |      |
| H      | .....      | H     | 105   | 10                      | H. & Gr.       | .....      | 1,937   | 3,297                  | 107.6                  | 314                       | 32 97                                     | 21 80                         | 66                             | 20                         | 11 17                                      |      |
| I      | S          | ..... | 72  | 5                       | H. Gr.         | .....      | 2,329   | 4,415                  | 161.4                  | 306                       | 44 15                                     | 24 90                         | 56                             | 15                         | 19 25                                      |      |
| J      | .....      | H     | 58  | 7                       | H.J.Gr.        | .....      | 1,959   | 3,332                  | 116.2                  | 402                       | 33 32                                     | 24 85                         | 74                             | 21                         | 8 47                                       |      |
| K      | .....      | H     | 110   | 8                       | H. & S.        | .....      | 2,608   | 4,556                  | 145.6                  | 331                       | 45 56                                     | 27 93                         | 61                             | 19                         | 17 63                                      |      |
| L      | .....      | S     | 75  | 4                       | S.             | .....      | 3,756   | 5,490                  | 184.0                  | 292                       | 54 90                                     | 45 07                         | 82                             | 24                         | 9 83                                       |      |
| M      | .....      | H     | 96  | 8                       | H.             | .....      | 2,287   | 3,738                  | 127.8                  | 311                       | 37 38                                     | 22 12                         | 59                             | 17                         | 15 26                                      |      |
| N      | H & S      | ..... | 70  | 4                       | S. & Gr.       | .....      | 2,885   | 4,743                  | 173.0                  | 271                       | 47 43                                     | 20 00                         | 42                             | 11½                        | 27 43                                      |      |
| O      | .....      | H     | 75  | 4                       | AH&Gr          | .....      | 2,283   | 4,940                  | 177.6                  | 263                       | 49 40                                     | 24 87                         | 50                             | 14                         | 24 53                                      |      |
| P      | .....      | H     | 102   | 10                      | H.             | .....      | 2,840   | 4,604                  | 158.8                  | 451                       | 46 04                                     | 27 65                         | 60                             | 17                         | 18 39                                      |      |
| Q      | .....      | S     | 80  | 4                       | S. & J.        | .....      | .....   | 4,893                  | 197.6                  | 244                       | 48 93                                     | 36 12                         | 73                             | 18                         | 12 81                                      |      |
| R      | .....      | A     | 120   | 15                      | A.             | .....      | .....   | 3,635                  | 135.1                  | 454                       | 36 35                                     | 31 93                         | 87                             | 23                         | 4 42                                       |      |
| S      | .....      | A     | 90  | 6                       | A.             | A.         | .....   | 4,408                  | 178.4                  | 294                       | 44 08                                     | 35 75                         | 81                             | 20                         | 8 33                                       |      |
| T      | .....      | A     | 195   | 16                      | A.             | A.         | .....   | 3,700                  | 143.9                  | 303                       | 37 00                                     | 25 84                         | 69                             | 17                         | 11 16                                      |      |
| U      | .....      | H     | 77  | 7                       | Gr.            | .....      | .....   | 3,061                  | 108.7                  | 278                       | 30 61                                     | 32 71                         | 1 06                           | 30                         | Loss 2 10                                  |      |
| V      | .....      | J     | 77  | 5                       | A. & J.        | .....      | .....   | 3,305                  | 126.6                  | 214                       | 33 05                                     | 27 70                         | 83                             | 21                         | 5 35                                       |      |
| W      | H & A      | ..... | 100   | 8                       | Gr.            | .....      | .....   | 3,977                  | 140.9                  | 318                       | 39 77                                     | 25 56                         | 64                             | 18                         | 14 21                                      |      |
| X      | .....      | S     | 85  | 7                       | S.             | .....      | .....   | 5,065                  | 188.3                  | 476                       | 50 65                                     | 26 00                         | 51                             | 13                         | 24 65                                      |      |
| Y      | .....      | A     | 80  | 7                       | A.             | .....      | .....   | 3,373                  | 122.4                  | 295                       | 33 73                                     | 26 50                         | 78                             | 21                         | 7 23                                       |      |



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The average feed cost of milk as recorded on 48 farms from which the above 25 herds are selected, is 65 cents per 100 pounds.

The average feed cost of fat on the same farms is 17.6 cents per pound.

In this table it will be noted that:—

The average herd yield of milk varies from 3,061 to 5,713 pounds per cow, a difference of 2,652 pounds.

The yield per cultivated acre varies from 194 to 641 pounds of milk.

The cost of feed per cow varies from \$18.42 to \$45.07.

The feed cost of 100 pounds of milk varies from 42 cents to \$1.06.

The feed cost of 1 lb. of fat varies from 11½ to 30 cents.

The profit per cow above the cost of feed runs as high as \$28.88, but in one herd there is an apparent loss of \$2.10.

The herd of 7 cows where the cost of feed averages \$18.42 per cow was fed 4 tons hay at \$8, 10 tons straw at \$4, 2 tons mixed fodder at \$2.50, 140 bushels turnips at 10 cents, 10 bushels potatoes at 35 cents, pasture \$5 per cow.

The 17 cows whose feed cost \$45.07 were given 4 tons hay, 4 tons straw, 5 tons corn fodder (at \$2.50), 2 tons mixed fodder, 112 bushels oats (at 40 cents), 500 bushels turnips, and pasture, also valued at \$5 per cow.

In the herd where the fat cost 11.5 cents per pound, the 4 cows average 173 pounds each, and were fed 1 ton hay, 8 tons straw, 200 bushels turnips, and pasture valued at \$5 per cow for the season.

In the herd where the fat cost 30 cents per pound the 7 cows averaged 108.7 pounds each, and were fed 3½ tons hay, 11 tons straw, 4 tons mixed fodder, 55 bushels oats, 900 bushels turnips, and pasture valued at \$5 per cow.

Mr. Harvey Mitchell, who was in charge of the Dairy Record Centre at Kensington, Prince Edward Island, states:—

‘The importance of providing green feed when pastures fail was certainly an outstanding feature down here last season; the flow of milk in August as compared with that of July was about one-half less with those who did not have peas and oats, while some fell off about one-third.

To give you some idea of the conditions here, one man said he had twenty-six head of cattle and depended on two wells for water; the cattle had only got water every second day since August, he could only get water enough from the two wells to supply half of them in a day and he would have to drive them two miles to get them to a brook. There has been some rain here but not enough to bring up the wells and springs. The Kensington factory was nearly 300,000 pounds of milk short of last season during August and September.

Then again it is important to know what is back of a pure bred bull. I know of different cases that came to my notice last season where two year-old heifers from scrub cows and pure bred bulls, did not do as well as heifers the same age from scrub bulls; thus making the average farmer prejudiced against the use of pure bred sires. I know of several cases of pure bred bulls being brought down here where the results from using them have been a hindrance rather than an improvement to the stock. I think this a point that cannot be emphasized too strongly.’

CHAS. F. WHITLEY.



APPENDIX VI.  
CREAMERY COLD STORAGE BONUSES.

APPLICATIONS IN 1911.

There were 65 applications received for creamery cold storage bonuses in 1911-12. Of this number, 18 of the cold storages failed to qualify for the bonus. Some of them were poorly constructed and others were not operated in such a manner as to give good results.

The following are the names of the 47 creameries which have received the bonus.

QUEBEC.

| Name of Creamery         | County.                 | Owner.                    | Amount. |
|--------------------------|-------------------------|---------------------------|---------|
|                          |                         |                           | \$ cts. |
| Athelstan.....           | Huntingdon.....         | H. A. Hampson.....        | 100 00  |
| Bissonnette.....         | Montcalm.....           | Roch Gamache.....         | 100 00  |
| Beauceville West.....    | Beauce.....             | Majorique Gilbert.....    | 100 00  |
| St. Benoit Labre.....    | Beauce.....             | Elzear Maheu.....         | 100 00  |
| Fontarabie.....          | Maskinonge.....         | Napoleon St. Louis.....   | 100 00  |
| Charrette's Mills.....   | St. Maurice.....        | Jos. Paquin.....          | 100 00  |
| Contrecoeur.....         | Verchères.....          | Sergius Cormier.....      | 100 00  |
| St. Felix de Valois..... | Berthier.....           | A. J. Desrosiers.....     | 100 00  |
| Foster.....              | Brome.....              | J. H. Leclerc.....        | 100 00  |
| St. Francois.....        | Beauce.....             | Jos. Bourque.....         | 100 00  |
| St. Gabriel.....         | Berthier.....           | Norbert Rocheleau.....    | 100 00  |
| Gentilly.....            | Nicolet.....            | Geo. Barabé.....          | 100 00  |
| St. Gédéon.....          | Beauce.....             | Eugène Moreau.....        | 100 00  |
| St. Hyacinthe.....       | St. Hyacinthe.....      | Chas. Duquette.....       | 100 00  |
| Jersey Mills.....        | Beauce.....             | Ludger Caron.....         | 100 00  |
| St. Jean Port Joli.....  | L'Islet.....            | Fred. Caron.....          | 100 00  |
| Lanoraie.....            | Berthier.....           | Phil. Allard.....         | 100 00  |
| Maria.....               | Bonaventure.....        | Rev. J. Gagne.....        | 100 00  |
| Milan.....               | Compton.....            | Louis St. Pierre.....     | 100 00  |
| Miquelon.....            | Mégantic.....           | J. E. Beauchemin.....     | 100 00  |
| Mont Laurier.....        | Labelle.....            | J. H. Charles.....        | 100 00  |
| Ulverton.....            | Drummond.....           | R. V. Hurk.....           | 100 00  |
| St. Valentin.....        | St. Jean Iberville..... | Société Co-operative..... | 100 00  |
| Ville Marie.....         | Pontiac.....            | A. J. Aubin, M.D.....     | 100 00  |

ONTARIO.

| Name of Creamery. | Owner.                        | Amount. |
|-------------------|-------------------------------|---------|
|                   |                               | \$ cts. |
| Brantford.....    | R. T. Stillman.....           | 100 00  |
| Brantford.....    | J. M. Hyde.....               | 100 00  |
| Coboconk.....     | John Ham & Son.....           | 100 00  |
| Drumbo.....       | Walter Murray.....            | 100 00  |
| St. George.....   | J. Malcolm & Son.....         | 100 00  |
| Guelph.....       | Stratton & Taylor.....        | 100 00  |
| Hagersville.....  | C. M. Kauffman.....           | 100 00  |
| Nelson.....       | Nelson Cream Association..... | 100 00  |



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ONTARIO—Continued.

| Name of Creamery. | Owner.                          | Amount. |
|-------------------|---------------------------------|---------|
|                   |                                 | \$ cts. |
| Onemee.....       | L. A. Southworth.....           | 100 00  |
| Peterborough..... | G. A. Gillespie.....            | 100 00  |
| Port Perry.....   | Jas. Stonehouse.....            | 100 00  |
| Rathburn.....     | Wm. Newton.....                 | 100 00  |
| Ridgeway.....     | John Sherk.....                 | 100 00  |
| Strathroy.....    | J. A. Waddell.....              | 100 00  |
| Wellesley.....    | McLaren Imperial Cheese Co..... | 100 00  |
| Shearer.....      | J. J. Hogan.....                | 100 00  |

ALBERTA.

|               |                                  |        |
|---------------|----------------------------------|--------|
| Calgary.....  | P. Pallesen.....                 | 100 00 |
| Red Deer..... | Butter & Cheese Association..... | 100 00 |

SASKATCHEWAN.

|                   |                          |        |
|-------------------|--------------------------|--------|
| Langenburg.....   | Thos. W. Cogland.....    | 100 00 |
| Lloydminster..... | O. B. Hartley, sec.....  | 100 00 |
| Melford.....      | Melford Creamery Co..... | 100 00 |
| Wadena.....       | Wadena Creamery Co.....  | 100 00 |

PRINCE EDWARD ISLAND.

|                   |                   |        |
|-------------------|-------------------|--------|
| Dunstaffnage..... | W. A. Miller..... | 100 00 |
|-------------------|-------------------|--------|

|  |          |
|--|----------|
| 466 creameries have received the full bonus of \$100.. . . . | \$46,600 |
| 145       "       "       \$75.. . . .                       | 10,875   |
| 139       "       "       50.. . . .                         | 6,950    |
| Total 750       "       "       . . . . .                    | \$63,485 |

Circular D & C. S. No. 4 is reprinted here to give the conditions under which the bonus will be paid in future.



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D. &amp; C. S.—CIRCULAR No. 4.

## DEPARTMENT OF AGRICULTURE.

OFFICE OF THE

## DAIRY AND COLD STORAGE COMMISSIONER.

OTTAWA, February 27, 1912.

*RE CREAMERY COLD STORAGE BONUSES.**To Creamery Owners:*

I am authorized to announce that Creamery Cold Storage Bonuses will be paid in 1912, and until further notice, on the following terms and conditions:—

The full bonus of \$100 will be paid *only* for creamery cold storages constructed on what is known as the Circulation System, the plans and specifications for which are contained in Bulletin No. 10 of the Dairy and Cold Storage Series. Blue prints of these plans on a working scale are furnished on application.

The Cylinder System which has been recognized in the past, has proved to be unsatisfactory, for the reason that we rarely find that the filling of the cylinders is properly attended to, and there is often insufficient salt used to make that system effective. The Circulation System, while costing more to install than the Cylinder System, is cheaper in the end if the labour of filling the cylinders every day is taken into account.

A bonus, not to exceed 50 per cent of the invoice price, will be paid to creamery owners who install 'Eureka,' or other refrigerators of similar construction, but in no case will the amount of the bonus paid for such refrigerators be more than \$100.

Applications for bonuses must be made before the first of May, in order to secure payment that year. Forms of application will be supplied on request to the Dairy and Cold Storage Commissioner, Ottawa. Monthly temperature record blanks will also be supplied, on which a daily record of temperature must be made. These temperature reports are to be sent to the Department regularly at the end of each month, beginning with the month of May.

Creamery owners who make application for bonuses on the 'Eureka' or other similar refrigerators, will be required to furnish a copy of the invoice, certified correct by the refrigerator manufacturers and also by the applicant for the bonus.

An inspector will examine all cold storages for which bonuses are asked some time during the season, and if they are found to have been constructed according to the plans and specifications and to have been properly maintained during the warm weather, the bonus will be paid at the end of the manufacturing season.

J. A. RUDDICK,

*Dairy and Cold Storage Commissioner.*



APPENDIX VII.

SUBSIDIES FOR PUBLIC COLD STORAGE WAREHOUSES.

CONTRACTS IN 1911-12.

Contracts have been entered into, during the fiscal year, for the payment of subsidies, according to the terms of the Cold Storage Act, with the following firms or persons:—

- Campbell & Hamilton, Calgary, Alta.
- The Edmonton Produce Co., Edmonton, Alta.
- The Moose Jaw Cold Storage Co., Moosejaw, Sask.
- Moores & Bidwell, Saskatoon, Sask.
- The City Cold Storage Co., Regina, Sask.
- J. H. Sansregret, Joliette, Que.

Applications are now (March 31, 1912) under consideration from:—

- The Brantford Cold Storage Co., Brantford, Ont.
- O'Keefe & Drew, Chatham, Ont.
- Central Canada Terminal Storage Co., Fort William, Ont.
- Brandon Creamery & Supply Co., Brandon, Man.
- Standard Fish & Fertilizer Co., Queen Charlotte Islands, B.C.

List of Public Cold Storage Warehouses erected under contracts for subsidies since the Cold Storage Act was passed in 1907, and now in operation.

| Name and Location.   | Refrigerated<br>Space in cu. ft. | Cost.      | Total Subsidy. |
|--|----------------------------------|------------|----------------|
|  |                                  | \$ cts.    | \$ cts         |
| N.B. Cold Storage Co., St. John, N.B.....                    | 744,000                          | 167,000 00 | 50,100 00      |
| Scott & Hogg, Peterborough, Ont . . . . .                    | 48,000                           | 14,500 00  | 4,350 00       |
| Halifax Cold Storage Co., Port Hawkesbury, N.S....           | 37,960                           | 30,386 69  | 9,115 99       |
| Cold Storage, Ltd., Woodstock, N.B.....                      | 37,161                           | 25,577 00  | 7,673 10       |
| J. D. Moore Co., St. Marys, Ont.....                         | 105,000                          | 36,019 62  | 10,805 88      |
| Lemon Bros., Owen Sound, Ont . . . . .                       | 33,000                           | 20,000 00  | 6,000 00       |
| The Chatham Fruit Growers' Association, Chatham,<br>Ont..... | 44,430                           | 19,350 00  | 5,805 00       |
| Davis and Fraser, Charlottetown, P.E.I. ....                 | 150,000                          | 50,000 00  | 15,000 00      |
| The B. Wilson Co., Victoria, B.C.....                        | 84,000                           | 75,000 00  | 22,500 00      |
| The Trenton Cooperage Mills, Ltd., Trenton, Ont...           | 166,446                          | 50,919 41  | 15,275 82      |
| Dominion Fish and Fruit Co., Quebec, Que.....                | 225,000                          | 222,843 22 | 66,852 96      |
| Maritime Cold Storage Co., Lockeport, N.S.....               | 59,940                           | 60,000 00  | 18,000 00      |
| St. Lawrence Produce Co., Brockville, Ont.....               | 100,000                          | 52,000 00  | 15,600 00      |
| Flavelles Limited, Lindsay, Ont.....                         | 131,510                          | 53,000 00  | 15,900 00      |
| Gunn's Limited, Harriston, Ont . . . . .                     | 57,069                           | 40,000 00  | 12,000 00      |
| Campbell and Hamilton, Calgary, Alta.....                    | 111,050                          | 75,000 00  | 22,500 00      |

The warehouses at Port Hawkesbury, N.S., Peterboro' Ont., and Owen Sound, Ont., have been enlarged to about double their original capacity, as given in the foregoing statement, but no further subsidy has been paid on that account.



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The large cold storage warehouse at Prince Rupert, B.C., for which a contract was entered into in 1909-10 is nearly completed and will be in operation about mid-summer. The City Cold Storage Company, Regina, also have the construction of their warehouse well under way. It is expected that the erection of all other warehouses now under contract, including the Acadia Cold Storage at Halifax, N.S., (contract reported in 1910-11), will be begun as soon as weather conditions permit in the spring.

For a further list of cold storage warehouses in operation before 1907, when the Cold Storage Act was passed, see Report for 1908.

#### FACTORS OF COST IN COLD STORAGE CONSTRUCTION.

There are several factors which enter in the cost of a cold storage warehouse, figured on a cubic foot basis, and these factors cause great variations. In the first place, the building itself may be constructed of wood, brick or re-enforced concrete, with all the differences in cost which the use of these materials implies; the insulation, if for a wooden building, may be combined with the structure itself, at a minimum cost for material and erection, or it may be of expensive fire proof or semi-fire proof character and cost many times as much as the cheaper material.

Then, again, much depends upon the kind of storage which is to be provided. If, as in the case of some of the warehouses given in the foregoing list, the space is all required for fish freezing or storage in which temperature ranging below Zero F. are frequently employed, the cost of insulation and machinery is necessarily very much greater than for warehouses where only non-freezing temperatures are required, such as for the storage of cheese, fruit and vegetables.

There is still another factor, and that is the size of the warehouse. The cost per cubic foot naturally being very much less for a large building than it is for a small one.

All these things have to be taken into consideration when estimating the cost of a cold storage warehouse.

J. A. RUDDICK,  
*Dairy and Cold Storage Commissioner.*



APPENDIX VIII.

SOME STATISTICS OF THE EXPORT TRADE IN DAIRY PRODUCE.

TOTAL EXPORTS OF CHEESE AND BUTTER IN FISCAL YEARS 1880 TO 1912 INCLUSIVE.

| BUTTER.                     |            |           | CHEESE.                     |             |            |
|-----------------------------|------------|-----------|-----------------------------|-------------|------------|
| Year.                       | Quantity.  | Value.    | Year.                       | Quantity.   | Value.     |
| <i>Years ended June 30.</i> | Lbs.       | \$        | <i>Years ended June 30.</i> | Lbs.        | \$         |
| 1880.....                   | 18,535,362 | 3,058,069 | 1880.....                   | 40,368,678  | 3,893,366  |
| 1890.....                   | 1,951,585  | 340,131   | 1890.....                   | 94,260,187  | 9,372,212  |
| 1891.....                   | 3,768,101  | 602,175   | 1891.....                   | 106,202,140 | 9,508,800  |
| 1892.....                   | 5,736,696  | 1,056,058 | 1892.....                   | 118,270,052 | 11,652,412 |
| 1893.....                   | 7,036,013  | 1,296,814 | 1893.....                   | 133,946,365 | 13,407,470 |
| 1894.....                   | 5,534,621  | 1,095,588 | 1894.....                   | 154,977,480 | 15,488,191 |
| 1895.....                   | 3,650,258  | 697,476   | 1895.....                   | 145,004,650 | 14,253,002 |
| 1896.....                   | 5,889,241  | 1,052,089 | 1896.....                   | 164,689,123 | 13,956,571 |
| 1897.....                   | 11,453,351 | 2,089,173 | 1897.....                   | 164,220,699 | 14,676,239 |
| 1898.....                   | 11,253,787 | 2,046,686 | 1898.....                   | 196,703,323 | 17,572,763 |
| 1899.....                   | 20,139,195 | 3,700,873 | 1899.....                   | 189,827,839 | 16,776,765 |
| 1900.....                   | 25,259,737 | 5,122,156 | 1900.....                   | 185,984,430 | 19,856,324 |
| 1901.....                   | 16,335,528 | 3,295,663 | 1901.....                   | 195,926,397 | 20,696,951 |
| 1902.....                   | 27,855,978 | 5,660,541 | 1902.....                   | 200,946,401 | 19,986,281 |
| 1903.....                   | 34,128,944 | 6,954,618 | 1903.....                   | 229,099,925 | 24,712,943 |
| 1904.....                   | 24,568,001 | 4,724,155 | 1904.....                   | 233,980,716 | 24,184,566 |
| 1905.....                   | 31,754,303 | 5,930,379 | 1905.....                   | 215,733,259 | 20,300,500 |
| 1906.....                   | 34,031,525 | 7,075,539 | 1906.....                   | 215,834,543 | 24,433,169 |
| <i>Years ended Mar. 31.</i> |            |           | <i>Years ended Mar. 31.</i> |             |            |
| 1907 (9 months) ....        | 18,078,508 | 4,011,609 | 1907 (9 months).....        | 178,141,567 | 22,006,584 |
| 1908.....                   | 4,786,954  | 1,068,703 | 1908.....                   | 189,710,463 | 22,887,237 |
| 1909.....                   | 6,326,355  | 1,521,436 | 1909.....                   | 164,907,139 | 20,384,666 |
| 1910.....                   | 4,615,380  | 1,010,274 | 1910.....                   | 180,859,886 | 21,607,692 |
| 1911.....                   | 3,142,682  | 744,288   | 1911.....                   | 181,895,724 | 20,739,507 |
| 1912.....                   | 8,844,402  | 2,077,916 | 1912.....                   | 163,450,684 | 20,888,818 |

DETAILED EXPORTS OF DAIRY PRODUCTS FOR YEAR ENDED MARCH 31, 1912.

| To all Countries.        | Quantity.   | Value.     |
|--------------------------|-------------|------------|
|                          |             | \$         |
| Cheese..... lbs.         | 163,450,684 | 20,888,818 |
| Butter..... "            | 8,844,402   | 2,077,916  |
| Cream..... galls.        | 886,266     | 792,687    |
| Condensed milk..... lbs. | 4,389,350   | 305,678    |
| Casein..... "            | 1,021,197   | 38,302     |
| Fresh milk..... galls.   | 7,771       | 975        |
| Total value .....        |             | 24,104,376 |



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COMPARATIVE VALUE OF DETAILED EXPORTS FOR YEARS ENDED MARCH 31, 1909, 1910, 1911 AND 1912.

|                     | 1912.      | 1911.      | 1910.      | 1909.      |
|---------------------|------------|------------|------------|------------|
|                     | \$         | \$         | \$         | \$         |
| Cheese.....         | 20,888,318 | 20,739,507 | 21,607,692 | 20,384,666 |
| Butter.....         | 2,077,916  | 744,288    | 1,010,272  | 1,521,436  |
| Condensed milk..... | 305,678    | 469,406    | 541,372    | 90,520     |
| Fresh milk.....     | 975        | 4,276      |            |            |
| Cream.....          | 792,687    | 1,714,528  |            |            |
| Casein.....         | 33,302     | 37,009     |            |            |
|                     | 24,104,376 | 23,769,014 | 23,159,336 | 21,996,622 |

EXPORTS TO UNITED STATES.

Values of Dairy Products Exported to the United States during the Years ended March 31, 1903, 1909, 1910, 1911 and 1912.

|                     | 1912.   | 1911.     | 1910.   | 1909.  | 1903.  |
|---------------------|---------|-----------|---------|--------|--------|
|                     | \$      | \$        | \$      | \$     | \$     |
| Cheese.....         | 31,653  | 36,034    | 23,995  | 19,428 | 17,732 |
| Butter.....         | 103,819 | 91,313    | 199,854 | 18,246 | 33,899 |
| Cream.....          | 792,505 | 1,714,528 | 220,446 | 8,256  | 2,737  |
| Condensed milk..... | 3,983   | 11,474    |         |        |        |
| Casein.....         | 38,302  | 37,009    |         |        |        |
| Sweet milk.....     | 975     | 3,257     |         |        |        |
|                     | 971,327 | 1,893,615 | 445,295 | 45,930 | 59,368 |

Down to the beginning of the fiscal year 1911, the exports of sweet milk, cream, condensed milk and casein were included under one head in the Trade and Navigation returns.



SESSIONAL PAPER No. 15a

## STATEMENT OF EXPORTS OF CHEESE BY COUNTRIES IN FISCAL YEARS 1902 TO 1912, INCLUSIVE.

(Years ended June 30, 1902 to 1906, and years ended March 31, 1907 to 1912.)

| To                         | 1902.      | 1903.      | 1904.      | 1905.      | 1906.      | 1907.      | 1908.      | 1909.      | 1910.      | 1911.      | 1912.      |
|----------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Great Britain.             | 19,620,239 | 24,620,004 | 24,099,004 | 20,174,211 | 24,300,908 | 21,909,879 | 22,763,736 | 20,268,166 | 21,481,566 | 20,577,542 | 20,733,064 |
| Australia.                 | 6,862      | 6,913      | 6,247      | 5,411      | 5,350      | 245        | 525        | 223        | 171        | 88         | 58         |
| British Africa.            | 868        | 2,514      | 7,559      | 10,612     | 16,623     | 18,261     | 16,362     | 12,466     | 16,425     | 22,601     | 26,873     |
| B. W. Indies.              | 18,542     | 44,674     | 34,253     | 36,176     | 25,509     | 13,666     | 27,533     | 26,940     | 24,035     | 25,844     | 26,259     |
| B. E. Indies.              | 60         | 40         | 315        | 62         | 20         |            |            |            |            |            |            |
| British Guiana.            | 1,833      | 2,165      | 1,193      | 2,571      | 3,860      | 3,143      | 6,228      | 4,452      | 5,232      | 4,747      | 7,872      |
| Other British Possessions. | 746        | 553        | 216        |            |            |            | 9          | 1          | 1,911      | 1,575      |            |
| Hong Kong.                 |            | 161        | 1,253      | 1,079      | 1,029      |            | 851        | 2,452      | 733        | 1,077      | 1,407      |
| New Zealand.               | 216        | 983        | 1,039      | 1,642      | 1,795      | 1,690      | 1,362      | 54         | 1,267      | 467        | 645        |
| Newfoundland.              | 20,100     | 21,334     | 21,754     | 35,171     | 30,992     | 37,748     | 35,792     | 41,163     | 36,912     | 39,855     | 44,435     |
| Belgium.                   |            |            | 10         | 22         | 287        |            | 2,080      |            |            | 1          |            |
| Argentina.                 |            | 14         |            |            |            |            |            |            |            |            |            |
| Cuba.                      | 350        | 331        | 211        | 102        | 811        |            | 57         |            | 17         | 419        | 53         |
| China.                     | 1,409      | 1,734      | 1,899      | 2,013      | 2,195      | 2,206      | 1,572      | 568        | 756        | 1,040      | 1,302      |
| Danish West Indies.        | 332        | 2,037      | 1,936      | 2,046      | 2,056      | 1,568      | 1,985      | 1,937      | 2,453      | 2,148      | 2,704      |
| France.                    |            |            | 44         | 700        | 7,203      |            | 10         | 81         |            | 5,534      | 38         |
| Japan.                     | 821        | 1,076      | 1,609      | 759        | 775        | 1,071      | 1,444      | 2,200      | 1,208      | 2,700      | 1,419      |
| Philippine Islands.        |            | 289        | 100        |            |            |            |            |            |            |            |            |
| St. Pierre.                | 158        | 120        | 356        | 341        | 875        | 318        | 190        | 364        | 311        | 338        | 274        |
| United States.             | 12,038     | 7,779      | 5,386      | 14,182     | 16,082     | 6,900      | 17,732     | 19,428     | 23,995     | 36,034     | 31,653     |
| Dutch West Indies.         | 538        |            |            |            |            |            |            |            |            |            |            |
| Norway and Sweden.         |            |            |            |            |            |            |            |            |            |            |            |
| Germany.                   | 1,179      | 170        |            | 104        | 994        |            |            |            |            |            |            |
| Bermuda.                   |            |            |            | 364        |            | 54         | 3          |            | 102        |            |            |
| Dutch Guiana.              |            |            |            | 12,505     | 14,033     | 9,080      | 9,245      | 3,174      | 11,385     | 1,126      | 10,494     |
| Egypt.                     |            | 15         | 23         | 18         | 13         | 9          |            |            |            |            |            |
| Mexico.                    |            | 30         |            |            |            |            |            |            |            |            |            |
| French West Indies.        |            |            | 159        | 329        | 1,594      | 630        | 168        | 499        | 108        | 72         | 56         |
| Central America.           |            | 7          |            |            |            |            |            |            |            |            |            |
| Holland.                   |            |            |            | 80         |            |            | 347        | 3          |            | 112        |            |
| U. S. of Colombia.         |            |            |            |            | 97         | 110        |            |            |            |            |            |
| Other countries.           |            |            |            |            | 68         |            | 6          |            | 5          | 142        | 212        |
| Totals.                    | 19,683,291 | 24,712,943 | 24,184,566 | 20,300,500 | 24,433,169 | 22,006,584 | 22,887,237 | 20,384,666 | 21,607,692 | 20,732,507 | 20,888,816 |



STATEMENT OF EXPORTS OF BUTTER BY COUNTRIES IN FISCAL YEARS 1902 TO 1912 INCLUSIVE.  
(Years ended June 30, 1902 to 1906; years ended March 31, 1907 to 1912.)

| To                             | 1902.     | 1903.     | 1904.     | 1905.     | 1906.     | 1907.     | 1908.     | 1909.     | 1910.     | 1911.   | 1912.     |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|-----------|
|                                | \$        | \$        | \$        | \$        | \$        | \$        | \$        | \$        | \$        | \$      | \$        |
| Great Britain.....             | 5,459,300 | 6,554,014 | 4,400,774 | 5,568,999 | 6,802,003 | 3,805,925 | 823,761   | 1,273,484 | 587,493   | 401,621 | 1,769,510 |
| British West Indies.....       | 71,816    | 112,968   | 127,790   | 80,323    | 87,085    | 59,313    | 85,371    | 95,370    | 76,026    | 70,444  | 54,365    |
| British Guiana.....            | 6,796     | 7,565     | 6,412     | 8,929     | 11,654    | 8,113     | 12,861    | 7,711     | 9,497     | 10,682  | 4,865     |
| Other British Possessions..... | 284       | 72        | ..        | ..        | ..        | ..        | 5         | ..        | 544       | 1,123   | 86        |
| Newfoundland.....              | 47,066    | 69,017    | 82,422    | 82,387    | 48,283    | 56,516    | 34,931    | 54,552    | 50,074    | 57,198  | 76,691    |
| China.....                     | 78        | 141       | 1,763     | 562       | 761       | 5,041     | 1,319     | ..        | ..        | ..      | ..        |
| Cuba.....                      | 243       | 202       | 796       | 658       | 285       | 1,034     | 720       | 96        | 22        | 985     | 158       |
| Danish West Indies.....        | 1,581     | 6,077     | 5,868     | 4,473     | 4,560     | 3,664     | 4,939     | 4,418     | 4,697     | 1,438   | 2,155     |
| French West Indies.....        | ..        | 1,020     | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Germany.....                   | 101       | 13        | 25,641    | ..        | ..        | ..        | ..        | ..        | 9,777     | ..      | ..        |
| Hawaii.....                    | ..        | 115       | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Hayti.....                     | ..        | 38        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Japan.....                     | 1,013     | 1,816     | 6,027     | 6,496     | 9,373     | 9,062     | 4,258     | 3,019     | 1,002     | 840     | 240       |
| St. Pierre.....                | 27,102    | 28,655    | 26,598    | 21,827    | 17,668    | 17,615    | 18,749    | 14,740    | 14,036    | 18,560  | 8,216     |
| United States.....             | 41,149    | 10,225    | 6,497     | 70,580    | 33,965    | 3,539     | 38,899    | 18,246    | 199,854   | 91,313  | 103,819   |
| British Africa.....            | 12        | 133,958   | 16,417    | 4,914     | 2,056     | 265       | ..        | 22,458    | 1,873     | 10,460  | 2,596     |
| Mexico.....                    | ..        | 4,685     | ..        | ..        | 1,268     | 484       | 265       | 660       | 936       | 59      | 171       |
| Brazil.....                    | 1,608     | 9,084     | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Dutch West Indies.....         | 2,040     | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| U.S. Colombia.....             | 92        | 1,175     | 2,272     | 200       | 1,747     | 2,145     | ..        | 1,105     | 832       | ..      | 69        |
| Australia.....                 | 260       | 6,187     | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Bermuda.....                   | ..        | ..        | ..        | 50,482    | 47,045    | 33,900    | 33,177    | 14,273    | 43,638    | 54,665  | 41,209    |
| France.....                    | ..        | ..        | 14        | 14,440    | 4,155     | ..        | ..        | ..        | ..        | ..      | ..        |
| San Domingo.....               | ..        | 1,351     | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Holland.....                   | ..        | ..        | 8,175     | 13,680    | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Venezuela.....                 | ..        | 6,240     | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Belgium.....                   | ..        | ..        | 10        | 116       | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Central America.....           | ..        | ..        | 686       | 1,062     | 3,431     | 4,932     | 9,448     | 7,071     | 2,500     | 3,948   | 3,268     |
| Corea.....                     | ..        | ..        | ..        | 15        | ..        | ..        | ..        | ..        | 15        | ..      | ..        |
| Dutch Guiana.....              | ..        | ..        | ..        | 186       | 30        | 40        | ..        | ..        | 48        | ..      | ..        |
| Turkey.....                    | ..        | ..        | ..        | 50        | ..        | 21        | ..        | ..        | ..        | ..      | ..        |
| Porto Rico.....                | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Panama.....                    | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Austria-Hungary.....           | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Alaska.....                    | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..        | ..      | ..        |
| Totals.....                    | 5,660,541 | 6,954,618 | 4,724,155 | 5,930,379 | 7,075,539 | 4,011,609 | 1,068,703 | 1,521,436 | 1,010,274 | 744,288 | 2,077,916 |



## SESSIONAL PAPER No. 15a

CHEESE IMPORTS INTO THE UNITED KINGDOM, FROM BRITISH TRADE RETURNS,  
YEARS ENDED DECEMBER 31.

| From              | 1904.     | 1905.     | 1906.     | 1907.     | 1908.     | 1909.     | 1910.     | 1911.     |
|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                   | Cwt.      | Cwt.      | Cwt.      | Cwt.      | Cwt.      | Cwt.      | Cwt.      | Cwt.      |
| Canada.....       | 1,900,556 | 1,858,767 | 1,925,835 | 1,698,847 | 1,541,502 | 1,566,546 | 1,607,074 | 1,473,275 |
| United States..   | 224,830   | 175,256   | 233,445   | 114,300   | 105,555   | 54,617    | 38,247    | 150,321   |
| Netherlands...    | 233,601   | 214,033   | 229,341   | 241,551   | 279,401   | 285,329   | 231,818   | 207,917   |
| New Zealand..     | 84,947    | 78,626    | 126,216   | 192,301   | 264,995   | 368,531   | 453,785   | 397,845   |
| Other countries.. | 110,363   | 116,000   | 123,957   | 125,234   | 114,633   | 115,067   | 125,427   | 118,964   |
| Total.....        | 2,554,297 | 2,442,682 | 2,638,794 | 2,372,233 | 2,306,086 | 2,390,090 | 2,456,351 | 2,348,322 |
|                   | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. |
| Canada.....       | 74.4      | 76.1      | 73.0      | 71.7      | 66.8      | 65.5      | 65.5      | 62.7      |
| United States...  | 8.8       | 7.2       | 8.8       | 4.8       | 4.6       | 2.3       | 1.6       | 6.4       |
| Netherlands....   | 9.1       | 8.7       | 8.7       | 10.2      | 12.1      | 12.0      | 9.4       | 8.9       |
| New Zealand....   | 3.3       | 3.2       | 4.8       | 8.1       | 11.5      | 15.4      | 18.5      | 16.9      |
| Other countries.. | 4.4       | 4.8       | 4.7       | 5.2       | 5.0       | 4.8       | 5.0       | 5.1       |
| Total.....        | 100.0     | 100.0     | 100.0     | 100.0     | 100.0     | 100.0     | 100.0     | 100.0     |

BUTTER IMPORTS INTO THE UNITED KINGDOM, FROM BRITISH TRADE RETURNS,  
YEARS ENDED DECEMBER 31.

| From              | 1904.     | 1905.     | 1906.     | 1907.     | 1908.     | 1909.     | 1910.     | 1911.     |
|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                   | Cwt.      | Cwt.      | Cwt.      | Cwt.      | Cwt.      | Cwt.      | Cwt.      | Cwt.      |
| Russia.....       | 404,717   | 461,140   | 606,549   | 657,649   | 639,118   | 601,712   | 584,040   | 638,284   |
| Sweden.....       | 206,791   | 188,209   | 182,803   | 226,740   | 238,929   | 312,142   | 345,684   | 360,357   |
| Denmark.....      | 1,708,619 | 1,630,363 | 1,675,761 | 1,818,811 | 1,857,103 | 1,764,027 | 1,726,091 | 1,707,178 |
| Germany.....      | 4,080     | 5,372     | 10,701    | 7,297     | 3,195     | 2,965     | 3,481     | .....     |
| Netherlands...    | 252,262   | 209,897   | 195,366   | 168,496   | 244,356   | 148,567   | 154,537   | 104,655   |
| France.....       | 371,061   | 348,442   | 319,401   | 281,306   | 394,612   | 413,306   | 361,249   | 171,080   |
| United States...  | 68,754    | 84,874    | 157,312   | 1,063     | 39,540    | 693       | 756       | 23,316    |
| Australia....     | 480,778   | 450,293   | 545,827   | 598,986   | 409,106   | 384,619   | 639,093   | 874,399   |
| New Zealand...    | 294,982   | 300,418   | 311,672   | 313,863   | 221,395   | 278,581   | 362,674   | 276,446   |
| Canada.....       | 268,607   | 292,117   | 190,968   | 34,753    | 47,877    | 22,522    | 16,805    | 61,936    |
| Other countries.. | 180,354   | 176,741   | 140,898   | 101,192   | 115,590   | 133,699   | 131,129   | 85,305    |
| Total.....        | 4,241,005 | 4,147,866 | 4,337,258 | 4,210,156 | 4,210,821 | 4,062,833 | 4,325,539 | 4,302,956 |
|                   | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. |
| Russia.....       | 9.5       | 11.1      | 14.1      | 15.6      | 15.2      | 14.8      | 13.5      | 14.8      |
| Sweden.....       | 4.9       | 4.5       | 4.2       | 5.4       | 5.7       | 7.7       | 7.9       | 8.4       |
| Denmark.....      | 40.3      | 39.3      | 38.6      | 43.2      | 44.1      | 43.4      | 39.9      | 39.7      |
| Germany.....      | 0.1       | 0.1       | 0.3       | 0.2       | 0.1       | 0.07      | 0.09      | .....     |
| Netherlands....   | 5.9       | 5.1       | 4.5       | 4.0       | 5.8       | 3.7       | 3.9       | 2.4       |
| France.....       | 8.7       | 8.4       | 7.1       | 6.7       | 9.7       | 10.1      | 8.4       | 4.0       |
| United States...  | 1.6       | 2.0       | 3.6       | 0.03      | 0.9       | 0.01      | 0.01      | 0.5       |
| Australia....     | 11.3      | 10.8      | 12.5      | 14.2      | 9.5       | 9.5       | 14.7      | 20.3      |
| New Zealand...    | 6.9       | 7.5       | 7.2       | 7.5       | 5.3       | 6.9       | 8.3       | 6.4       |
| Canada.....       | 6.3       | 7.0       | 4.4       | 0.8       | 1.1       | 0.6       | 0.3       | 1.4       |
| Other countries.. | 4.5       | 4.2       | 3.5       | 2.4       | 2.6       | 3.3       | 3.0       | 2.1       |
| Total.....        | 100.0     | 100.0     | 100.0     | 100.0     | 100.0     | 100.0     | 100.0     | 100.0     |

N.B.—1911 figures unrevised.



3 GEORGE V., A. 1913

IMPORTS OF DAIRY PRODUCE, FOR CONSUMPTION IN CANADA, DURING THE YEAR ENDED  
MARCH 31, 1912.

|                     | Quantity. | Value.    |
|---------------------|-----------|-----------|
|                     | Lbs.      | \$        |
| Cheese.....         | 919,189   | 178,811   |
| Condensed Milk..... | 133,365   | 9,981     |
| Casein.....         | .....     | 20,933    |
| Butter.....         | 3,874,587 | 1,016,418 |
| Total.....          | .....     | 1,226,143 |

IMPORTS OF BUTTER BY COUNTRIES.

|                           | Quantity. | Value.    |
|---------------------------|-----------|-----------|
|                           | Lbs.      | \$        |
| From---Great Britain..... | 700,900   | 201,219   |
| Australia.....            | 101,640   | 21,642    |
| New Zealand.....          | 2,139,944 | 569,171   |
| Denmark.....              | 1,120     | 282       |
| Norway.....               | 1,500     | 225       |
| Turkey in Asia.....       | 165       | 38        |
| United States.....        | 929,318   | 223,841   |
| Total.....                | 3,874,587 | 1,016,418 |







